ROCKS and MINERALS

PUBLISHED
BI-MONTHLY

Edited and Published by
PETER ZODAC

March-April
1951

Contents for March - April, 1951

CHIPS FROM THE QUARRY 114
ARCTIC GOLD. *By Joel Martin Halpern* 115
HOUSE BUILT OF GEODES. *By Walter Reeves* 121
THOMSONITE OCCURRENCE NEAR PEEKSKILL, N. Y. *By Peter Zodac* 121
TRIP TO ROCHESTER, N. Y. *By Peter Zodac.* 122
THREE FIELD TRIPS. *By John O. Griesbach.* 128
AFTER FLUORESCENT MINERALS. *By A. W. Porter.* 130
GREEK COAL MINES GET U. S. AID. 131
MINERALOGICAL SOCIETY OF PENNSYLVANIA *(New Club Being Formed)* 131
TRIP THROUGH SOUTHWEST WONDERLAND. *By T. A. Patterson.* 132
100,000 YEAR OLD TREES ARE FOUND IN EXCAVATION. 136
HOW HOT IS KIBBLEHOUSE QUARRY? *By C. A. Thomas.* 137
APACHE TEARS AND OTHER MINERAL ODDITIES FROM THE MOGOLLON MOUNTAINS, NEW MEXICO. *By Don Alfredo.* 138
PLAN YOUR COLLECTION. *By Charles R. Blyth, Jr.* 143
WORLD NEWS ON MINERAL OCCURRENCES. 144
RE-EXAMINATION OF AN OLD MAINE LOCALITY. *By L. W. Carpenter, M. D.* 156
THE AMATEUR LAPIDARY. *Conducted by Commander John Sinkankas* 159
NEW WET SANDING ATTACHMENT. 162
LIMONITE AFTER WOOD NEAR KERSHAW, S. C. *By Horace W. Slocum.* 162
THE MICRO-MOUNTER. *Conducted by Leo N. Yedlin.* 164
MINERAL SHOPPERS' GUIDE. *Conducted by Charles A. Thomas.* 166
THE SAND COLLECTOR. *Conducted by Peter Zodac.* 168
RHODOCHROSITE IN COLORADO. *By Robert D. Roots.* 170
DR. LLOYD FISHER DIES SUDDENLY. 171
CLUB AND SOCIETY NOTES 172
COLLECTOR'S COLUMN. *Conducted by A. Cal Lector.* 185
BIBLIOGRAPHICAL NOTES 186
INDEX TO ADVERTISERS 224

Entered as second-class matter September 13, 1926, at the Post Office at Peekskill, N. Y. under the Act of March 3, 1879.
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Specially written articles (as contributions) are desired.
Subscription price $3.00 a year; Current numbers, 60c a copy. No responsibility is assumed for subscriptions paid to agents and it is best to remit direct to the Publisher. Issued bi-monthly on the 30th of the uneven months.

Authors alone are responsible for statements made and opinions expressed in their respective articles.

ROCKS and MINERALS, 157 WELLS ST., PEEKSKILL, N. Y. U. S. A.
The official Journal of the Rocks and Minerals Association

CHIPS FROM THE QUARRY

EDITOR TO VISIT CHICAGO

April 30 - May 5th

During the week of April 30 to May 5th, the Editor of ROCKS AND MINERALS will be in Chicago, Ill., attending a Plant Maintainance Show, as the guest of his good friend, Joe deLuca, Peekskill's noted emery miner. And in turn we will be the guests of the Walter Maguire Co., who will have a large exhibit at the Show.

The Walter Maguire Co., Inc., of 60 East 42nd Street, New York 17, N. Y., are the sole distributors of Emeri-Crete, a scientifically-balanced aggregate of 100% selected emery to which is added cement and water in proper proportions; this product when used as a top dressing on concrete floors provides a smooth non-skid surface which withstands heavy crushing weights and is practically indestructible. All the emery in Emeri-Crete is mined in Peekskill, N. Y., by Joe deLuca.

According to Mr. deLuca, the arrangements are all set and reservations secured. We will leave New York City Sunday, April 29th at 6 p.m. on the 20th Century (New York Central R. R.)—nice rooms at the Lakeside Athletic Club in Chicago reserved—and we will return on the 20th Century, Saturday, May 5th at 5 p.m.

"All we need now is nice weather and good health," say Mr. deLuca, "in order that our trip may be a most enjoyable one."

Of course the full week will not be spent at the Show—the Editor hopes to spend a good part of it elsewhere, perhaps on a field trip or two or else calling on collectors.

Likes World News Best!

Editor R & M:

I now have quartz xl specimens from every state in the Union but Alabama, Delaware, Louisiana, and North Dakota. I noticed several new addresses from those states in the last issue of R & M so will write them and hope for the best. By the way, the "World News on Mineral Occurrences" is the feature I like best about your magazine which really is tops!

Elmer Lester
Sacramento, Calif.

February 17, 1951

Syracuse Mineral Club

Through the efforts of Mr. R. L. Sylvester and Dr. E. T. Apfel, a mineral club has been formed in Syracuse, N. Y. Meetings will be held in the Geology Building at Syracuse University (arranged by Dr. Apfel of the Geology Department) on the 2nd Friday of each month. The first meeting was held on Friday, March 2, 1951, with only 8 in attendance but enough to form the club. The name selected is Syracuse Mineral Club. Mr. Sylvester is temporary chairman of the club and Miss Guenever Pendray, Secretary. At their second meeting, to be held on Friday, April 13th, Dr. Chute, geology instructor at Syracuse University, will be the speaker whose talk will be illustrated with colored slides and in addition he will display his collection of gem stones.

Subscribers and readers in the Syracuse area who may be interested in joining the new club, contact Mr. Sylvester at his home at 154 Parkside Avenue, Syracuse 7, N. Y. (phone 5-6020).

Lapidary Journal Moves To Palm Desert, California

On March 1st, 1951, the offices of the LAPIDARY JOURNAL moved to the Desert Magazine Building at Palm Desert, Calif., and the magazine will from now on be published on the DESERT MAGAZINE presses. The LAPIDARY JOURNAL will remain independent, however, under the sole ownership of its Editor and Founder, Lelande Quick.

ROCKS AND MINERALS extends its best wishes to the LAPIDARY JOURNAL as the move is a wise one and should result in a better and faster distribution of America's popular magazine on gem cutting. LAPIDARY JOURNAL comes out once every two months and the subscription is only $2.00 a year. From now on address all correspondence to The Lapidary Journal, Palm Desert, California.

Magazine Is Tops!

Editor R & M:

Let me say right here that in my opinion your magazine, ROCKS AND MINERALS, is TOPS.

B. D. Blackwell
Santa Monica, Calif.

February 7, 1951

ROCKS and MINERALS

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ARCTIC GOLD

By JOEL MARTIN HALPERN

To armchair travelers, especially in the United States, few places have a stronger allure than far-off Alaska. Now that the "wild and woolly" west is really alive only so far as it serves to accentuate our historical heritage, this land of the far north has become our last frontier. To the geologist, mineralogist, and, I might add, even to the layman, one of the most interesting features of the territory is its large placer gold deposits. Every American boy has heard of the Nome gold rush, and the more literarily adventurous have undoubtedly delved into the sagas of Jack London.

Like most lands which have been glorified in the popular mind, many erroneous notions have arisen about Alaska. While I am still a green-horn as far as the North is concerned, my picture of this territory has, since my brief visit to Alaska, changed considerably. Part of what is said here is a reflection of this change of mind.

During my stay in Alaska, I spent some time on Seward Peninsula. While there, I visited the Casa de Paga Gold Co., mine near Deering (see accompanying map for its exact location), on the northern side of the Peninsula. The only means of transportation to the mining site is by small planes which come from Nome or Kotzebue. These towns are served several times each week by regular commercial flights using DC 3's which originate in Fairbanks and which connect with lines in the continental United States. These small planes which come to the mine (Piper Cubs, Norsemen, etc.) are flown for the most part by expert bush pilots, men highly skilled in the art as well as the science of flying, for here there are no easily accessible emergency fields, and directional radio beams are frequently lacking. Since for many people he often is the only link with the outside world, the pilot in this region acquires a position of unique responsibility. All the food and some of the personnel are flown in by these bush pilots. Some of the lighter machinery which is transported in this manner is brought into a landing strip near the mine.

Bulky materials such as oil, gas and large machinery are brought in by the supply ships which come once or twice a year during the short summer to Deering. Starting at Deering. which is nothing more than a small coastal Eskimo village, a dirt road used only for trucks to the mine continues inland toward the mining site. Leaving Deering, which today consists largely of tar paper shacks, the road gradually climbs into the mountains. Although there is not a tree in the vicinity, the scenery is not nearly as desolate as one would suppose. There are willows, grass and varicolored wild flowers in abundance. Even though the summer is short, vegetation grows quickly, and as one travels inland there are some trees to be seen in the more sheltered places. Animal life is also in evidence, birds being especially common. I was most impressed by two swans taking to the air as our truck came rumbling up the road.

At frequent intervals along the way were old abandoned miners' shacks, dredges and piles of waste rock serving as constant reminders that this land, despite its relative isolation, has not been left untouched by modern civilization. In fact, the whole area has been gone over quite thoroughly many times since the

initial gold rush of the early 1900's. Although today most of the mining is done with mechanical dredges, the day of the independent prospector has by no means passed. At the present time many of the residents, including the bush pilots and even some of the local Eskimos, work their own claims.

When I arrived at the Casa de Paga mine in mid-July, patches of snow could still be seen on the surrounding hills. In spite of this the mosquitoes were in profusion. As anyone who has visited in any arctic or sub-arctic region knows, this is a considerable understatement. These little beasts are always present in numbers that approach the mathematical concept of infinity; no matter how much you swat, or regardless of the quantity of fly dope you use, they are impossible to eliminate. This is especially true when walking over the tundra, where you may lose sight of all landmarks but never of the mosquitoes.

Like most operations of this sort the houses were arranged in a way that would facilitate their easy removal. A mess hall, bunk house, tool shed and sod house used as permanent living quarters were the most imposing structures. The scene of the operations in this little tundra valley is by no means awe-inspiring, but that does not mean that it is lacking in beauty. A little river runs clear and cold

past verdant willows garlanded with daisies. Thickets of alders, the bark of which is utilized by the Eskimos for making a dye, and bright berry patches dot the grass-covered hills that roll gently from the valley. This picture of the brief Arctic summer no doubt differs considerably from the scene most people imagine. It can get very warm during the fleeting summer, and there was quite a heat wave at the time of my visit to the mine. Several of the men went swimming in the nearby river, and only a day before I had taken a dip in the ocean, even though it was but a few weeks since the ice pack had gone out to sea. The water was cold but refreshing, and it seemed to be much less salty than in the mid-latitudes.

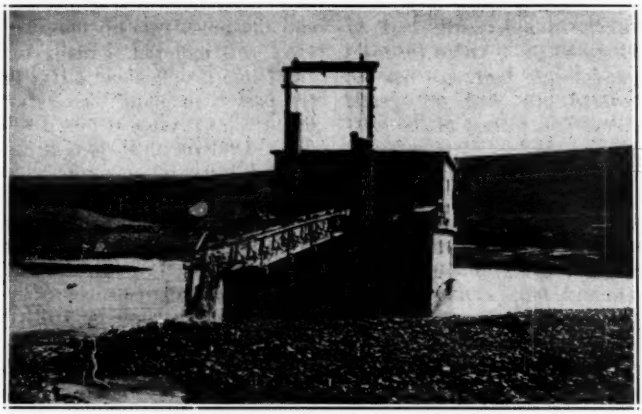
Modern mining, as I was soon to learn, is a very complex process. The first step, prospecting, is now called exploration. In this operation holes about six inches in diameter are drilled down to bedrock. The gravel is then brought to the surface and panned to assay its gold content. The region is dredged if gold-bearing gravel is found in sufficient quantity and over a large enough area. But before the dredge can start operations there is a great deal of preparatory work that must be done.

First the underlying gravel must be exposed. This means that the living surface vegetation, the accompanying peat and the muck beneath must be stripped away and removed. Usually the surface vegetation is only about a foot think, and the peat is no more than a few feet in depth. This is often removed with a bulldozer. Underneath there is at least twenty feet of black to gray silt, which means just plain muck. Interspersed through this material are ice lenses which are to be expected in this region where permafrost occurs. A few feet beneath the surface the ground remains frozen the year 'round, and thawing by artificial means is necessary for mining purposes.

The best way to remove the silt is to wash it away with high pressure hoses (see accompanying photo). It was in an operation similar to this that an almost perfectly preserved baby mammoth was uncovered near Fairbanks, Alaska. Old mammoth tusks and Eskimo artifacts are among some of the other things that have been recovered from these deposits at this mine.

After the muck has been removed, the gravel as well as the bedrock is still frozen. Before dredging can begin, therefore, the gravel must be thawed. This is accomplished by the use of cold water joints (¾ inch pipe on 5 - 10 foot centers). A ten-day cycle is required, and the water is usually between 45-60°F.

These high pressure hoses wash away the silt covering the gold bearing gravel.



This was one of the two dredges in operation when I visited the mine. The water is rushing out the flume at the rear end.

The course of the river is then diverted by makeshift gravel dams, and the dredge is brought in to eat its way through the gold-bearing gravel. To one who has never watched a dredge in operation, it is truly a fascinating sight. At first glance it appears to be a floating barge with a revolving chain of iron buckets biting into the gravel at one end and a stream of water shooting out of a flume at the other.

Climbing on board, after dodging the water spouting from the forward end, I received a rather different picture. This gobbling and groaning Goliath was anchored at the stern end by a huge steel pillar called a spud. This support is sunk into the gravel when the dredge begins operations and is raised when the machine is moved. At the top of the bucket conveyor belt sits a panner who takes a sample of the gravel every few minutes and pans it to check on its gold content.

This fellow was one of the several old time prospectors who had quit working on his own. Panning for gold is not confined to gravel, it seems, for he told me that when part of Nome burned down several years ago, he was able to recover some of his gold by panning the ashes. At the top of the conveyor belt the gravel is dumped into a hopper. There it is subjected to a powerful stream of water, and everything is washed down the flume. The gold and silt containing the heavy minerals are thus caught in the riffles (little slots on the flume).

About once every ten days, the dredge is shut down and the gold which is mixed with the other heavy silt is removed. About 95% of the gold which is taken from the flume requires only superficial cleaning. The remaining portion is then mixed with concentrate finely ground up in a ball mill, and the gold is separated by amalgamation. Next, the gold amalgam is hydraulically separated, and the mercury is distilled off. At this stage the gold is about 90% pure. The remaining 10% is made up of copper, silver and iron. This finished product is then shipped to the bank in Nome.

The gravel is a rather complex mixture but consists mainly of quartz, several forms of iron oxide and limestone in varying combinations. Among the less common constituents are goethite, marble with limestone, actinolite schist (siliceous aluminum oxide), fibrous actinolite (which resembles asbestos), garnets, magnetite, specular hematite, pyrites, cinnabar (very rare), scheelite and hydroger-

tite (iron oxide, FeO, and water).

The gold itself is of various kinds, but the fineness and purity remain similar in all types. Rough black gold with an iron oxide coating is the predominant kind. Less common are fine plates of gold which show evidences of transportation and abrasion. Rarest of all is the subcrystalline and angular type which occurs in relatively thick lenses, and there are, of course, variations in these types due to the individual circumstances under which the chemical growth by precipitation occurred.

The bedrock in the area is mostly limestone and schists, the latter probably originating from sandstone and shale. There are also calcareous and graphitic schists in the surrounding country, and several outcroppings of lava flows occur in the nearby hills.

This man sits at the top of the dredge's bucket chain and pans the gravel to assay its gold content.

Preparatory mining work begins about the first of May; the dredging starts in the middle of July and continues well into October. Of course, these dates vary depending upon the weather conditions. Contact with the outside is maintained by radio. In addition, a mail plane usually comes a few times a week. The total labor force is about thirty men, mostly Eskimos recruited from Deering, plus two women who act as cooks. The chow at the mine was unexpectedly good for this part of the world and included fresh vegetables, meat, freshly baked bread and powdered milk. The vegetables are grown in an adjoining garden while all the rest of the food is shipped in by air.

Later that summer I had an unanticipated opportunity to contrast present conditions with those that existed at the turn of the century. This occurred when I met one of the old-timers who arrived when the gold rush at Nome was just getting underway. At this period there was a large influx of people to the Seward Peninsula, just as there is during any gold rush. Some made a fortune in gold, others set up businesses, but many soon became discouraged and returned home. A few chose this spot as their new home.

Today. a half-century later, most of these old-timers are gone, and the few remaining ones are rich chiefly in memories. James Henry is one of these men. He is an octogenarian who, several times a year, commutes from his home up river to a little Eskimo village by rowing eight miles. This is necessary since he has no other way to obtain supplies. Recently married to a native woman, he does a little mining now and then, but just enough, he says, "to keep myself in grub."

As he recalled "the good old days" in his tar paper town house by the shore of the Arctic Ocean, he was animated by an enthusiasm that belied his chronological age. His father was one of the fabled pioneers who migrated overland to California during the middle of the last century. James in turn left California for

Alaska and headed for Seward Peninsula. It was a hard and arduous life, and unlike the many who, after getting off the boat, took one look at Nome and sold their outfits for a fraction of their cost, he stayed on.

There was little glamour in his chosen career, but there was much pain and misery. The winters were severe and the unwary often froze. There were no dredges and few machines, so much of the mining technique consisted of pick and shovel operations. Rewards, however, were not lacking. Gold was there, and in relative abundance, too, if you just happened to strike the right place. This, of course, meant continuous prospecting for new sites.

Some areas, Candle Creek near Deering for example, have continuously yielded large revenues since they were first discovered. The large majority of areas, though, like most of the sites I passed on the way up to the mine, have long since been abandoned. for after they were originally discovered most of the gold was extracted in a short time.

Today, with the price of gold relatively low, it is only the larger operators who can survive, and many of them do so only with great difficulty. Besides mining, the coming of the airplane has also caused this area to lose much of its previous isolation. It is nevertheless beyond the pale of what we are accustomed to term the indispensables of civilization; it goes without saying that running water, central heating, sanitation systems and electricity are either unknown or little used.

Despite all its forbidding aspects, this land has a strong allure which can be perceived even by the traveler. For some of those who came to exploit its wealth, Seward Peninsula has become a permanent home. Describing his last trip "outside" (the Alaskan term for the continental United States), James said that his greatest thrill was returning to his secluded arctic cabin.

Acknowledgment

I should like to express my gratitude to Don Stewart, manager of the Casa de Paga mine, and to Charlie Garret, mining engineer, for their hospitality and also for their invaluable assistance in enabling me to prepare this article.

Reference

Moffit, Fred H., "The Fairhaven Gold Placers, Seward Peninsula, Alaska," in *U.S.G.S. Bulletin,* No. 247, 1905.

NATIONAL GEOGRAPHIC MAGAZINE TO FEATURE SOUTHWEST ROCKHOUNDS

A letter dated January 30, 1951, sent R & M by David P. Record, of the Mission Curio Mart, 4400 Mission Road, Tucson, Arizona, carried the interesting information that NATIONAL GEOGRAPHIC MAGAZINE is to feature an article on the Southwest Rockhounds. Willard R. Culver, Geographic photographer of Washington, D. C., has visited a number of localities in the Southwest taking pictures and notes.

Quoting from Mr. Record's letter: "I am sending you a clipping which may be of interest. Mr. Culver of the NATIONAL GEOGRAPHIC MAGAZINE said that the hobby of mineral collecting ranked third in number of members, and consequently they felt that an article on rockhounds and collecting in the Southwest would be of great interest to their readers.

"He tried to cover the specialty of each district, ours being noted for chrysocolla and fine aragonite crystal clusters. We took him to the copper mines producing the former, and to a cave in the Catalina Mountains near Tucson, where fine aragonites may be obtained. He took also several pictures of chrysocolla, rough and polished, in our shop. They intend using 16 pages of color in the article."

Watch the NATIONAL GEOGRAPHIC MAGAZINE for the coming article which should appear later in the year!

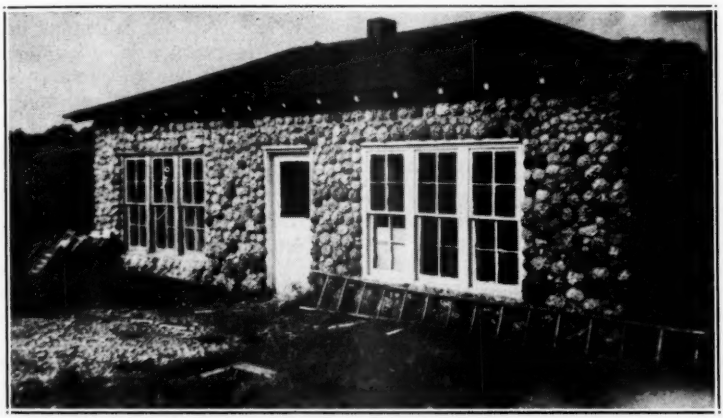
HOUSE BUILT OF GEODES

By WALTER REEVES
R3, Greencastle, Ind.

Here is a picture of a house built of geodes that I ran across while driving through southern Indiana, near Brownstown, in central Jackson County.

While many of these geodes are probably solid quartz, a good number of them if opened would show beautiful quartz crystals in clear quartz and many shades as pink, citrine, red and other colors while others would be lined with chalcedony in white or shades of brown, red, blue and other colors. Still others would have calcite crystals on quartz.

No one lives in the geode house. I asked a neighboring farmer about the source of the geodes but got little information. He said they had all been picked up but I am sure there are many more if one could find the location.



House built of Geodes.

THOMSONITE OCCURRENCE NEAR PEEKSKILL, N. Y.

By PETER ZODAC

Thomsonite is a hydrous silicate belonging to the zeolite group of minerals. It is generally white in color but red, green and brown are also known.

At an emery mine near Peekskill, N. Y. thomsonite has been found in large number of specimens as white to cream-colored radiating masses forming thin veins in a very fragile rock. Some of the rays reach 5 inches or more in length but it is rather difficult to obtain good specimens due to the fragility of the rock and the mineral itself. The veins vary in thickness from 1/8 to an inch or more.

So fragile is the thomsonite that it breaks as you try to pick it up—start with a 5 inch specimen and by the time you pick it up it may be only ½ inch in length. It is not surprising that a mineral should break up easily, due to weathering, but the odd part about this thomsonite is that it was blasted out of a pit—thrown many feet up in the air to land undamaged on the ground, but—a few months later (perhaps only weeks) it has weathered so badly you cannot pick it up whole.

The emery mine (small pit) is located close to the Colabaugh Pond Road (east bank of Colabaugh Pond), 4½ miles southeast of Peekskill, Westchester Co., N. Y. The mine can also be located 2½ miles northeast of Croton-on-Hudson, a village 6 miles south of Peekskill.

TRIP TO ROCHESTER, N. Y.

By PETER ZODAC
Editor, Rocks and Minerals

On Saturday, April 27, 1946, Oscar Bodelsen and I went on a 4-day to Rochester, N. Y. Oscar lives in Mt. Kisco, N. Y., a few miles southeast of Peekskill, and he arrived early to pick me up so that we left the city 10:00 a.m. sharp. It was raining when we left Peekskill (on U. S. 6) but when we reached Bear Mountain Park, it had turned to snow. The speedometer registered 119.0 miles in Peekskill, N. Y.

123.0 miles—Bear Mt. Bridge over the Hudson River.

124.0 miles—Bear Mt. Park. Ground covered with snow.

161.0 miles—We turned right off U. S. 6 on N. Y. 17, in Middletown.

184.7 miles—Monticello. Stopped for gas; lots of snow here. Monticello is a popular summer resort and county seat of Sullivan County.

283.5 miles—Binghamton, N. Y. This is an attractive city in southern Broome County. It is the county seat of Broome County and is a railroad center at the junction of the Susquehanna and Chenango Rivers. In stopping for a red light, a car behind gave us quite a bump—our car received a bad dent in the rear, but otherwise no damage.

301.1 miles—Apalachin, a little village in southeastern Tioga County.

302.3 miles—Our first mineral stop. The road here (N. Y. 17) exposed a gravel bank along its right edge that was about 300 feet long and 10 to 15 feet high. The gravel seemed to be mostly dark shale but we found a few small dark gray chert pebbles and a thin slab of red fossiliferous shale that contained small brachiopods and coral fossils.

308.0 miles—Owego, an attractive little town. The name means "An Indian Village."

314.0 miles—Along the right edge of the road (N. Y. 17) was a long bluff of dark gray horizontally banded shale that extended about 600 feet and was 20 feet high. We searched in vain in this exposure for some minerals but all we could find was some small brown masses of limonite. Small fossils (corals?) were seen in the shale.

328.5 miles—Waverly, a nice little town in the extreme southwestern corner of Tioga County and on the Pennsylvania border. Across the border was Sayre which we visited and where we stopped for a soda. A small gravel cut in a side road attracted our attention and we stopped to examine it—a nice pebble of reddish microcline was found. Sayre is in the extreme northern part of Bradford County, Penn.

We returned to Waverly and continued westwardly on N. Y. 17.

337.4 miles—Chemung County line.

337.5 miles—Another gravel cut that bordered the right edge of the road (N. Y. 17). The cut was about 100 feet long and 15 feet high. Of course we stopped to examine it and found flesh-colored microcline pebbles, smoky quartz pebbles, but the most interesting was fossilized shale; I collected two dark brown shales that were heavily fossilized—some of the fossils were tiny starfishes.

338.5 miles—Chemung, a small village.

351.4 miles—Elmira, a nice little city and the county seat of Chemung County. It was 6 p.m. when we reached Elmira and we decided to call it a day. We registered at the Mark Twain Hotel (had room 706). Elmira was the summer home of Mark Twain, and the hotel named in his honor is a very good one. The city, on the Chemung River, is noted for its Elmira College for Women.

We had snow all the way to Elmira but the road was getting drier; it stopped snowing about the time we reached Owego. Scenery beautiful from Binghamton to Elmira.

Sunday, April 28, 1946
(2nd Day of Trip)

351.4 miles—Elmira (Mark Twain Hotel). We left the city at 9:45 a.m. Snow on the mountains around Elmira—

good sized mountains west of the city. Just west of Elmira is Big Flats—very small but nice flat area.

367.3 miles—Corning, a city in southeastern Steuben County, is famous for its Corning Glass Works.

370.0 miles—Painted Post, nice little town. Here we left N. Y. 17 and turned right on U. S. 15. following Cohocton River to Cohocton.

375.0 miles—We stopped again at another dark gray shale exposure that bordered the right edge of the road (U. S. 15) for about 1,000 feet and was 25 feet high. The best we could do here was the finding of creamy incrustations of aragonite on gray shale. No fossils seen.

Route 15 goes up a long and beautiful valley that is bordered on both sides by mountains.

378.0 miles—Campbell, a small village.

382.0 miles—Savona. The valley splits here, we take the left branch. Lake Salubria (small) is soon passed on the right.

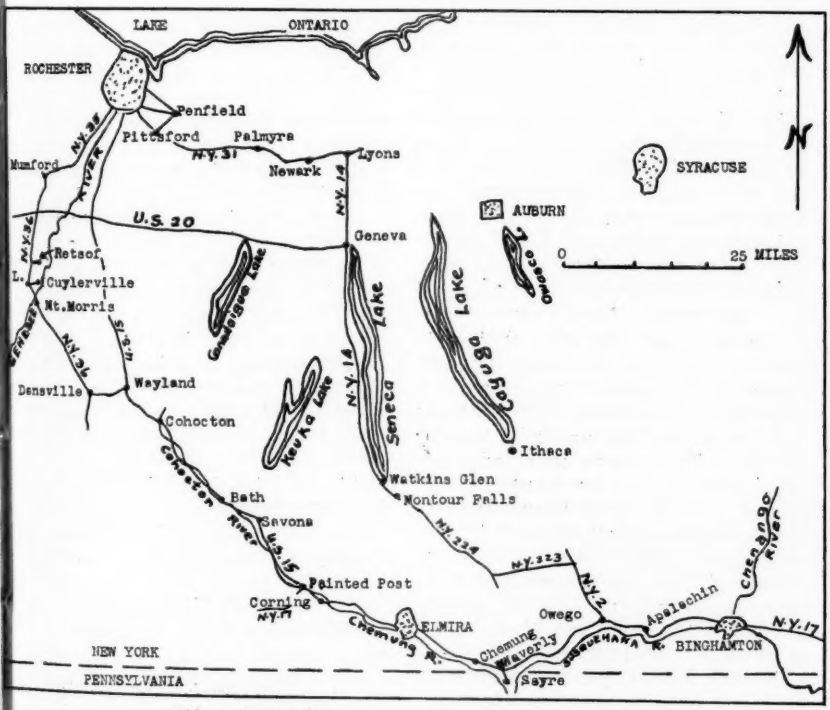
388.0 miles—Bath, county seat of Steuben County.

404.5 miles—Cohocton, a nice town.

413.0 miles—Wayland, another nice little town. Here we stopped to see Jean Wells, a subscriber. We found him to be a young man who did a little cutting, but had practically no mineral collection at the time of our visit. That year he made a trip to Idaho which he wrote up and which appeared in the August, 1947, issue of ROCKS AND MINERALS (East to West after Cutting Material, pp. 736-737).

From Wayland we took N. Y. 39 to Dansville.

420.0 miles—Dansville, we took N. Y. 36 out of here.



Map of the area west of Binghamton, N. Y., showing routes taken by the author and his friend, Oscar Bodelsen.

436.0 miles—Mt. Morris, a nice town. Snow seems to have disappeared, even in the distance.

438.2 miles—We cross the Genesee River which here is quite wide but shallow and rocky.

440.0 miles—Leicester. we turned right on N. Y. 39.

441.5 miles—Cuylerville, a small village but noted for its salt mine. It wasn't necessary to inquire for directions for reaching the mine, as its headframe could be seen straight ahead. Cuylerville is in central Livingston County.

443.3 miles—Sterling Salt Co. mine. The mine was abandoned, its buildings falling to ruins, and its inclined shaft filled with water to the top. According to posted signs, this was the Barbara Shaft which must have been sunk in 1905-1906. The shaft was concreted, at least to its water's edge, was 8 x 8 in size, and dipped about 30 degrees. About 800 feet away was another shaft, but we did not visit it.

We collected two minerals here, anhydrite and halite. The anhydrite occurred as small dark gray crystals, both loose and imbedded in halite. The loose crystals were especially common around the shaft, lying on top of the ground. Those imbedded in halite were found on the dump. The crystals, though small, were of good quality with sharp edges. It was Oscar who spotted the loose crystals.

We had some difficulty at first in finding halite (salt) as it seemed to be absent. To the right of the shaft was a huge concrete bin. about 100 x 300 feet and 5 feet deep, that was filled to many feet above its top with material so deeply pitted and black as to puzzle us. Assuming it to be some reject from the plant, we paid no attention to it until our failure to find halite forced us to examine it and to our amazement it turned out to be halite. Only the exposed surface of this halite was black, its interior was gray. It was a very coarse crystalline gray halite whose exposed surface due to weathering, became pitted and turned black. And this exposed surface or crust, was quite tough and difficult to break with a hammer. After we discovered that halite turned black on exposure to the atmosphere, the mineral was quite easy to find elsewhere. We found it crystallized on rock, wood, glass, iron spikes, and even on a peach pit, of course none of these were collected but are mentioned merely to show how common halite turnd out to be once it was recognized.

Although the other shaft was not visited, we did visit its dump which was also large and seemed to be all salt (halite). This was a fine crystalline gray salt which often had a snow-white color. No anhydrite was seen here but it may be present.

Although the mine had been abandoned for a number of years, it seems strange why the salt, in huge amounts, should be left behind to the mercy of the elements.

We returned to Leicester (445.8 miles) and continued on N. Y. 36 towards S. Greigsville (449.4 miles) where to the right could be seen the mine of the Retsof Salt Co. (International Salt Co.). We soon reached the mine (450.5 miles) which was in active operation. It had a beautiful layout. but all fenced in. As it was Sunday, the mine was not working but someone was there as cars were parked on the property. The gate was closed and try as we could, it was not possible to attract anyone's attention and we were forced to go away. We looked over the terrain near the gate but all we could find was a 2-inch pebble of hornblende in schist. (No rock outcrops around this property nor was any seen at the Cuylerville mine)..

We headed back for S. Greigsville (if we had continued on we would have reached the village of Retsof) and continued our journey northward on N. Y. 36.

452.0 miles—S. Greigsville.

458.3 miles—U. S. 20 crosses N. Y. 36.

463.0 miles—Caledonia, a nice town. Got gas here.

464.8 miles—Monroe County line.

465.0 miles—Mumford, on N. Y. 36

This village is noted for its calc tufa deposits and we tried and tried to find the locality, after numerous directions received from local citizens. The rock had been quarried on the Allen place (now Baker) and several houses were seen built entirely of calc tufa. The most notable and largest edifice built of the calc tufa was the Mumford United Presbyterian Church which was a beautiful building that we stopped to examine. I hope to revisit Mumford in order to find the locality, (abandoned some years ago) as I never saw a calc tufa deposit. (Calc tufa is a spongy or porous deposit of limestone).

At the last place inquired for the calc tufa deposit, we were told of a big gypsum mine at nearby Wheatland, also in Monroe County. This we visited as it was easily found. It is operated by the Ebsary Gypsum Co. and is quite a big plant. It was not working being Sunday, but someone was around and though we roamed through the buildings, not a soul could we find and we were forced to go away. We were told this was a gypsum mine but—not a shaft, tunnel, diggings or dump could be seen—not even an outcrop. We went away with the feeling that gypsum must be brought in by railroad to be processed—next day I learned that gypsum is actually mined there by tunnel (or shaft) but that a building encloses it entirely—also that there is no waste rock to be thown away.

Wheatland seems to consist of only the large Ebsary mine and the nearby tiny railroad station. I have long wanted to visit a gypsum mine and had I known definitely that one was present at Wheatland I would never have left the property without seeing it. I am still waiting to see a gypsum mine.

We returned to Mumford. turned right at the traffic light (471.8 miles), and continued our journey on N. Y. 36. At the north edge of Mumford we cross Mumford Creek and at the end of the bridge (472.0 miles) we turned right on N. Y. 35. At mileage 474.0, we could see the Ebsary Gypsum plant off to the right, about a mile. At mileage 483.0 we saw the Genesee River again, about 25 feet to the right, which here is about 200 feet wide and deep. At mileage 488.0, we reached the southern outskirts of Rochester and at mileage 492.5 is Rochester Hotel, on West Main Street, where we turn in for the night (5:30 p.m.)

Monday, April 29, 1946
(3rd Day of Trip)

We had planned originally to continue the journey to Buffalo but on reaching Rochester Oscar felt it was necessary for him to return home and so our plans had to be altered. On the way back, however, we would stop to see Ward's Natural Science Est., the world's most famous mineral dealers.

We left Rochester Hotel at 9:35 a.m. and went down Main Street through the business section of the city.

492.5 miles—Hotel Rochester.

495.2 miles. Turn left off East Main Street on Culver Road.

496.5 miles—Culver Road is now U. S. 104.

498.4 miles—Turn right on Ridge Road (U. S. 104 goes left here).

499.6 miles—Ward's, 10:00 a.m. at 3300 Ridge Road.

Here we met Robert Vance in charge of the mineral department, and his assistant, David Jensen, who welcomed us cordially and where we had a most wonderful time rummaging through their huge stock. We both found many interesting minerals to take back with us—Oscar is interested chiefly in silver minerals, and I in localities. The minerals are housed in large cabinets which reach almost to the ceiling and it would take easily a week to inspect them all. A most pleasant surprise to me was the running across of some half-dozen nice minerals bearing my labels—reminders of the days when I was an active mineral dealer. These specimens had been purchased from me years ago by collectors who were now deceased and whose collections had been purchased by Ward's.

About 100 feet east of the main building at Ward's (which houses the mineral department) is an old abandoned sand

pit, that is about 1,000 feet long, 500 feet wide, and 20 feet deep. I went to it alone, more for the purpose of getting a view of distant Lake Ontario than to examine it, and while I was standing still for a few minutes at one spot. a slight noise attracted my attention. Looking down to my right, I saw a pheasant walk calmly off from her nest. just about 3 feet away. There were a number of eggs in the nest, and after gazing at them for a few seconds and after the disappearing mother bird, I walked leisurely up to the mineral department and told Mr. Vance what I had seen. He was intensely interested and wanted to see the nest, so I took him to it. Apparently no one knew a pheasant's nest was so close to the Establishment (about 300 feet away). Incidently all I could find in the pit from the mineral angle were loose pebbles of reddish microcline and milky quartz.

We left the Establishment at 5:15 p.m. (our mineral purchases stowed away in the car) with Mr. Vance leading the way as he was taking us to the Penfield quarry.

499.6 miles—Ward's

507.0 miles—Elison, a small place.

509.2 miles — Penfield quarry on Whalen Road in Penfield, Monroe County.

The Penfield quarry is a square-shaped working about 500 feet on the side and with vertical walls 40 feet high. The quarry was not working at the time of our visit and it was filled with water to a depth of 20 feet. The rock is a horizontally banded gray limestone. The Penfield limestone quarry is noted for calcite, celestite, dolomite, fluorite, gypsum (selenite), marcasite, and sphalerite—all found in beautiful crystals—but all we could find was dolomite as groups of small white crystals on dark gray limestone. Had the quarry been working and we had more time to spend, we no doubt would have found many nice specimens of the other minerals.

509.2 miles — Penfield quarry, 450 feet to left of Whalen Road. We continue on Whalen Road.

509.6 miles—Turn right on 5 Mile Line Road.

510.3 miles—School to left.

510.5 miles—Traffic light in Penfield, a small village.

514.0 miles—Pittsford, a nice town, and the home of Mr. Vance. Here we got off to express our thanks to Mr. Vance and to say good bye. This may have been the last time we saw each other as he passed away on January 19, 1950 (See his obituary notice in ROCKS AND MINERALS, March-April, 1950, p. 178). He was a very nice man and his death was a heavy blow to his many friends and mineralogy suffered a great loss, too.

We turned left in Pittsford on N. Y. 31 and headed eastward, crossing the famous Barge Canal in the town. We passed through Egypt (a small place), Macedon (nice town), and on the eastern outskirts of Palmyra (530.5 miles) we stopped to examine a small gravel cut but all we could see were small reddish granite pebbles.

When mileage 538.0 was reached we were in Newark, a good sized town on N. Y. 31 and in southern Wayne County. Some nice selenite plates used to be found in or around Newark (perhaps in the excavation for the Barge Canal which goes through the town) and we stopped to inquire from a number of inhabitants. No one approached knew anything about the locality and as a matter of fact did not even know what selenite was.

At mileage 541.1 we stopped to inspect a high road cut, through gravel, in the hope selenite might be spotted. No selenite—just limestone pebbles with veins of milky quartz.

In Lyons, the county seat of Wayne County (544.9 miles), we turned right on N. Y. 14, heading south for Geneva where we planned to spend the night.

Geneva (560.3 miles) was reached at 7:30 p.m. We registered at Hotel Seneca, the best hotel in town but had a poor room assigned to us (the only room available, however, as the others were all taken).

Geneva is a nice little city and we enjoyed our walk through its busines

section, taken after our evening meal.

Tuesday, April 30, 1946
(4th and Last Day of Trip)

We left Geneva at 8:00 a.m.. heading southward on N. Y. 14.

560.3 miles—Hotel Seneca. On the way out of the city we noted some nice buildings—part of Hobart College—up hill on right. Soon Seneca Lake appeared on our left and which we followed for its full length. Seneca Lake is the largest of the famous Finger Lakes.

568.0 miles. Yates County Line.

574.7 miles—I spotted something and yelled to Oscar to stop. He did and I got out to investigate. It was a limonite geode—a nice one and partly opened—lying in the ditch along the right edge of the road. Apparently it had fallen down out of the bordering bank but search failed to reveal more geodes.

590.9 miles—Schuyler County line.

596.5 miles—Watkins Glen. We reached this famous spot at the southern tip of Seneca Lake at 9:05 a.m. and stopped for gas and also to eat breakfast which we failed to do in Geneva. There are a number of salt wells in town owned by the Watkins Salt Co. Well No. 1 was 2800 feet deep, so the gas station attendant informed us, and this well was only 100 feet away, on the same street (N. Franklin St.). We did not go through the "Glen" itself as Oscar was anxious to keep going, so we continued our journey, taking N. Y. 224 out of town. (See "Watkins Glen", by Eugene W. Blank, ROCKS AND MINERALS, September, 1930, pp. 78-82; also "A Trip to Syracuse," by Peter Zodac, ROCKS AND MINERALS, January-February, 1951. p. 34).

Our route took us through Montour Falls, also in Schuyler County, and we stopped for a few minutes to view them (See p. 34 in the above reference for a description of them).

From here we headed southeasterly for Binghamton, Newburgh, Bear Mountain Bridge, and Peekskill where Oscar dropped me off and continued alone for his home in Mt. Kisco. Peekskill was reached at 7:40 p.m., mileage 838.5.

Total mileage for trip 729.5.

Our trip was a most interesting and enjoyable one and which I would like to repeat someday and with Oscar, if he can get away. Oscar is one of the nicest and most congenial persons you ever met and a trip in his company is always a very enjoyable one. When Oscar used to come around and say, "Let's go!" I didn't even bother with a hat but just grabbed a hammer and the biggest bag and we were off. But them days are gone forever as Oscar is married now! Just as soon as I get a nice friend, some sweet girl comes along and marries him! Now I am looking around for another friend.

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THREE FIELD TRIPS

By JOHN O. GRIESBACH

1009 E. 3rd Street, Duluth 5, Minn.

Last fall I was on three major field trips: (1) to the Wausau, Wisconsin, area in the company of Jack Gelineau. There we found several fine specimens, mostly with the use of a 1907 Bulletin of the Geology of North Central Wisconsin. Many of the localities had been completely eradicated through the 43 year period since that book had been written, but for whatever interest it is worth, here is a list of the minerals found (Sept. 26-28, 1950) and actually added to our collections: *Acmite,* fine radiated aggregates, dark grass-green, in flesh colored orthoclase pegmatite. The acmite makes up about 10% of the rock, and is very showy, the aggregates being from ¼ to ¾ inch in diameter. *Aegirite,* as large black prisms in a feldspar rich pegmatite, and also in a pegmatitic phase of a nepheline syenite. *Crocidolite,* as blue-green to blue xline aggregates filling miarolitic openings in a quartz--rich pegmatite, and as inclusions (surficial) in quartz crystals which were able to develope into the openings. *Zircon,* as well formed crystals, reddish brown, from 1/16 to ¼ inch diameter, in quartz rich pegmatite. *Irvingite,* a yellow lithia mica similar in appearance to zinnwaldite, in feldspar-rich pegmatite (this is the type locality for this mineral first described by Weidman, Wis. Geol. Sur. Bull. XVI). *Pyroxene, var. Percivalite,* also described in the above reference, as olive to dark green radiated crystal aggregates in quartz rich pegmatite. *Pyroxene,* var. undetermined, as fine dark green, prismatic monoclinic crystals in miarolitic openings of large size in feldspar-quartz pegmatite carrying large concentrations of lavender fluorite. This is most likely the larger sized crystal form of the previously described percivalite as it was said to have been very common in the formations from which our specimens were derived. A specimen is to be sent to the Wis. Geol. Sur. for further identification and comparison with other specimens in their collections from the Wausau area. *Fluorite,* as violet to lavender xline masses comprising about 50% of a feldspar pegmatite. This is a very interesting rock, the fluorite appearing as semi-rounded bodies in the xled feldspar, and makes handsome specimens as the flesh color of the feldspar tends to point up the fluorite color. This writer has never seen a "rock" of this type before, nor have I found any references to such a type. Among the rocks we found were zircon syenite, nepheline syenite, nepheline-aegirite pegmatite, aegirite (amphibolite) schist, quartzite (99% pure silica) from the immense Minnesota Mining Co. quarry on Rib Hill (highest elevation in Wisconsin), and the others mentioned above. All specimens were from Sections 22, and 23, T 29 N, R 6 E, Marathon Co., except the quartzite, whose location was given above.

(2) During the week of the 9th of October, 1950, members of the UMD Geology-Mineralogy Club and mineralogy students of UMD (University of Minnesota, Duluth Branch) took a field trip to the Black Hills and Eastern Wyoming. We were gone six days, and travelled almost 2,000 miles. The group numbered nine people, and we travelled in two autos. Major points of interest taken in by the party were, in order of sequence: Oahe Dam Site, Missouri River near Pierre, S. D. (Gypsum, limonite concretions, and fossils); tour through the Homestake Gold Mine, Lead, S. D. (collecting in many areas and on dumps, arsenopyrite, pyrrhotite, chlorite, cummingtonite in blue, gray, and yellow fibrous radiating aggregates, pyrite, and a fine series of schists composed of all the above in varying quantities and degrees of compaction); Bear Butte, near Sturgis, S. D.; Sundance Mountain and Devil's Tower, Wyoming (rhyolite, and rhonolitic phonolite, the formations be

ing genetically related to the Black Hills core); Newcastle, Wyoming (recently developed oil field); Wind Cave National Park, S. D.; Abbington Pottery Feldspar Mine, near Custer, S. D. (rose quartz, tourmaline, triphylite, apatite, orthoclase, microcline, albite, muscovite); Needles Highway (unusual weathering of coarse granite, similar to kopjes of South Africa); Mt. Rushmore National Memorial (garnet and tourmaline in pegmatite near "pig-tail" and tunnel); Iron Mountain (limonite, chalcedony, jasper, drusy quartz); Bob Ingersoll Mine, near Keystone, S. D. (of the 60 minerals which have been found here we collected and identified 34 different species including autunite, gummite, uraninite, staurolite, vivianite, lithiophilite, beryl, serpentine, garnet, muscovite, biotite, sericite, lepidolite, apatite, schorl, indicolite, rubellite, triphylite, albite, cleavelandite, lollingite, spodumene (gray and pink varieties), native silver, amblygonite, columbite, and others too common to mention); Bad Lands National Monument (chalcedony, colorful quartz and jasper cobbles, fossils); and numerous other ten minute stops to look over the formations and take movies, color, and black-and-white photos.

Since our return we have put on an exhibit in the hallway of the main building here at UMD, of the more colorful and interesting acquisitions made for the school geological museum while on the trip. This has proved so interesting to the bulk of the student body that we are now planning an exhibit of fluorescent minerals in an enclosed case rigged up with a double throw switch to enable students to throw on either the fluorescent or white light to view a composite collection.

(3) The last week end of October, 1950, several of the faculty members, and some of the geology students and Club members made a trip to Grand Marais, Minn., to the world famed Thomsonite deposits. We all came back with excellent specimens of thomsonite, and lintonite, some of the former in very large individual pieces, up to 2 x 3 x 4 inch masses of solid thomsonite. It is extremely difficult to remove in pieces this size on account of its brittleness and orbicular structure. The largest I have to date is one specimen of vein-thomsonite, a pure slab 1¼ x 2½ x 3½ inches, and an amygdule, unbroken in matrix, 1 ¾ x 4½ inches. The largest pure lintonite I have to date is 1½ x 2¼ inches in matrix. A surprising number of fine specimens were obtained on this trip, some of which went into the University collection. Permission must be obtained from the owner of Thomsonite Beach prior to entering the property, but he lives on the Thomsonite Point so that is readily acquired. Several years ago some thoughtless collectors went in there and dynamited specimens out. They very nearly spoiled the privilege of collecting for all the rest of us for as long as Mr. Helmersen owns the property. Collectors are liable to prosecution if they do not ask permission before going into the area. I have been making trips there in search of this beautiful mineral since 1934, shortly after I started to collect minerals. Each time I have managed to work out a few excellent pieces for cabinet display, and a lot of the amygdules so popular with some of the lapidists.

Incidentally, just this summer a massive xl of beryl was worked out of the Bob Ingersoll Mine near Keystone, S. D., which weighed over 60 tons. This was reported to our party by the owner's representative who gave us permission to collect in the mine and on the dumps. I should imagine that this is some sort of record!

Made Her Mouth Water!

Editor R & M:

Particularly enjoyed the Jan-Feb., 1951, issue with the article on the trip to the Finger Lakes region of New York which happens to be the part of the country my family comes from. However, have not visited there since before my interest in rocks and lapidary work commenced and so the "fossils sticking out of the ground in the ditch on Lord's Hill" made my mouth water with the frustration of having been there when I wasn't interested in fossils.

Florence Swan
Chicago, Ill.

February 16, 1951

AFTER FLUORESCENT MINERALS

By A. W. PORTER
Pepperwood, Calif.
President, Humboldt Gem and Mineral Society

On numerous occasions ROCKS AND MINERALS has printed articles on fluorescent minerals to be collected in Lake County, Calif. This location, being about 200 miles south from Pepperwood, I decided to give it the once over. As luck would have it, I was able to round up our field trip chairman, Mr. Frank Loveless, of Eureka. So on Monday morning, 7:00 a.m., August 14, 1950, the two of us left my place in Pepperwood, 40 miles south of Eureka, and headed our car towards the small town of Middletown, in Lake County.

We had gone only about half-way when we blew the head gasket on our car. This delayed us about 2 hours in having a new one replaced but we spent part of the time in having lunch, and then continued our trip towards Middletown. This little town was formerly a center for mercury mining but now it is more of a resort and farming area; all of the mines are at present inactive owing to the low price of the metal.

Just south of Middletown about 3 miles on Highway 29, is the old Mirabel mine. This mine is now closed, possibly for all time as the reduction buildings have all been removed. This property has changed and is now being operated as a summer resort. Here you may enjoy nature at its best! Here you may catch Mr. Trout for a price! A number of new cabins have been built and the prices are right. Upon arriving at the place we met the proprietor, told him of our mission, and found him 100% OK for he promptly handed us the key to the whole works. As it was still daylight, we immediately started to acquaint ourselves with the locality, but this we were not able to do fully as the old workings are extensive and the dumps numerous. Darkness came as we had dinner and thus refreshed, we set out again and this time with two short wave lights for our night's work. We stuck it out until 11:30 p.m. and by that time had several hundred pounds of specimens in our car. Highway 29 running right through the works, there was no back breaking work to carry our "loot" any distance as we were able to drive the car right up to the dumps.

After we had finished collecting, we headed for our cabin, enjoyed a hot shower, and then were ready for bed. Summing up our night's work, before going to sleep, we did not think too much of it at the time but we were due for a happy surprise upon getting home. After a good night's rest, we left for home in the morning. On our way home we came to a spot where a truck loaded with peaches had gone down a bank and was badly wrecked. You can imagine what happened to those peaches! After looking the wreck over and buying a couple of boxes of peaches which the driver was selling for a dollar a box, we continued on our way. I began to notice that Mr. Loveless kept looking down the banks as we were rolling along and finally I was forced to ask him for what was he looking? He promptly told me that he was looking for another wrecked truck—but this time loaded with cows—as he wanted some cream to go with the peaches! He just couldn't think of anything else but peaches and cream! Needless to say, Mr. Loveless was sadly disappointed.

Upon arriving at home that night, I took a good fluorescent look at the "pile of Junk" that we collected and was I surprised! Such gorgeous colors! I had never before seen anything like them! I believe they are second to none, and they are hard to describe. There was very little red, such as you see in the calcites from Franklin, N. J., but a lot of orange and other colors such as a beautiful blue with "bolts of lightning striking a fire on the side of a colorful mountain." It is so hard to describe the colors so all I can say is that they are a "gold mine" when it comes to fluores-

cence. It sure put a good shot in the arm of my already extensive collection. I am now planning another trip in the near future and I will put in at least a week on those old mine dumps.

At this writing I have not as yet finished cleaning and checking all the minerals collected some of which were heavily impregnated with cinnabar, the chief mercury mineral of the mine. The cinnabar occurred in opalite and dolomite, the latter was the dominating mineral that produced the wonderful fluorescence. How these minerals will react under the long wave light I am in no position to say as up to now I have seen them under the short wave only—but I understand that they respond favorably.

Aside from the fact that some fellow with sticky fingers got away with Mr. Loveless' gallon thermos jug, our trip to Middletown was a most successful one with one regret—that our many rockhound friends throughout the U. S. A. could not have been with us.

GREEK COAL MINES GET U. S. AID

Washington, December 10, 1950—Two mines on the Greek island of Euboea will be opened up to provide lignite for a new thermal electric plant in the Eubean Gulf area, the Economic Cooperation Administration announced today.

The mines are being opened on the basis of a survey made by an American engineering firm earlier this year to determine the best source of fuel for the thermal plant. The survey was made with the help of ECA dollars under a Marshall Plan industrial project, which has now been expanded to include the development of the lignite mines.

The lignite deposits are in the Aliveri area on Euboea and are located close to the site of the Eubean Gulf thermal-electric power plant. The mines will be the prime source of fuel for the plant which is being constructed under another Marshall Plan industrial project. The plant, which will have a capacity of 68,000 Kilowatts, is one of the key installations in the modern nation-wide electric utility system now being set up in Greece.

The mines will have estimated lives of 25 and one-half years for one and 27 years for the other. Additional mines will be opened as needed. Based on recoverable proven reserves, it is estimated that the Aliveri field contains enough lignite to supply the fuel requirements of the thermal plant for 37 years. It is anticipated that the first mine will produce 417,000 metric tons of run-of-mine lignite per year, and the second mine, 250,000 tons per year.

The development of the lignite deposits was proposed as the most economical method of supplying fuel for the thermal plant, which otherwise would have to import oil.

MINERALOGICAL SOCIETY OF PENNSYLVANIA

(A new club now being formed.)

Pennsylvania, one of the world's greatest areas for fine mineral specimens and which boasts the 2nd oldest mineral club of the country, may soon have a statewide mineralogical society. Agitation for such a society has long been manifested and it may soon be a reality.

Leonard J. Duersmith, 405 Poplar St., Columbia, Pa., one of Pennsylvania's most noted collectors, is the chief backer of the state society. He has a number of prominent collectors lined up already but wants to obtain a few more. All who are interested in such a society are urged to contact Mr. Duersmith. Write him TODAY, sending in your name and address applying for membership. The Editor of ROCKS AND MINERALS has sent in his name and address. If the hundreds of collectors residing in the Keystone State would give Mr. Duersmith their full support, the Mineralogical Society of Pennsylvania could easily become the largest mineral club in the country.

TRIP THROUGH SOUTHWEST WONDERLAND

By T. A. PATTERSON
R. R. 1, Granby, Missouri.

In company with three others the writer of this paper recently made a trip through Oklahoma, Texas, Louisiana and Arkansas. The trip was made the last week in June, 1950, when grass lands and forest were arrayed in the bright colors of summertime, and the scenery along the way at its best. The purpose of the trip was to enjoy the scenery and to secure information about mineral resources and rock formations,

Leaving the old mining town of Granby, Mo., early in the morning of June 24, our route was west on highway 60. We went through Neosho, Mo., near which there occurs limestone bluffs along Shoal Creek, a plant is located here for crushing and grinding the rock which is used on farmlands for neutralizing soil acidity. The upper portion of the limestone is formed of stone containing layers and nodules of chert. Beneath this is a 12 to 15 foot thickness of pure limestone fit for agricultural purposes. This is being mined by cutting back horizontally from the face of the bluff. Huge pillars have been left to support the overlying deposits, and several acres have been mined out, the mine and bluff adjacent to it afford an excellent opportunity for the study of Mississippian period formations.

From Neosho we next came to Seneca, Mo., where there are large deposits of tripoli. Tripoli is a fine grained abrasive material of many uses, and is believed to have been produced by weathering and disintegration of chert or novaculite. The tripoli beds lie near the surface and are white and pink in color. A large processing plant is located near Seneca, and Missouri has second place in tripoli products.

From Seneca we passed through Wyandote, Okla., and crossed the upper forks of Grand Lake over the Twin Bridges. The lake is formed by a great multiple arch dam across Grand River between Disney and Langley, Oklahoma. The lake is a large and beautiful sheet of water enclosed by tree covered hills and limestone bluffs. The forks of the lake are formed by the joining of Neosho and Spring Rivers. Neosho River has its source in the bluestem grass lands of southeast Kansas and Spring River rises in the Missouri Ozarks. The Tri-state lead and zinc mining district is located in the lower drainage area of these rivers and near Carthage, Mo., there are large quarries of crystalline limestone which is sawed into building blocks of excellent quality. Many great buildings such as the Missouri State Capitol have been constructed of this stone which has become nationally known as Carthage Marble.

Family group picture taken in Galveston, Texas. Reading left to right: E. M. Roseberry holding his son Dickey (15 months old); Mrs. and Mr. Richard Lashmett, T. A. Patterson (the author) and Myriam Roseberry (7 years old). Photo by Mrs. Roseberry. Both ladies are the daughters of Mr. Patterson.

West of the Grand Lake region we came to the nearly level prairielands of northeastern Oklahoma. Turning south at Vinita, Okla., we followed highway 69. This highway forms a dividing line between the Eastern Oklahoma oil bearing rock strata and the older rocks of the Ozark Hills of Missouri and Arkansas. No commercial oil pools occur in Oklahoma in rocks older than the Ordovician Period, other oil bearing formations belong to the Devonian, Mississippian, Pennsylvanian and Permian Periods. In the Missouri-Arkansas Ozarks, rocks of these later periods have been removed by

erosion, and for this reason geologists believe no oil horizons of importance will ever be found in the Ozarks.

Crossing the Arkansas River near Muskogee, Okla., we noted the sandbars along the river channel. The Arkansas River separates the hill country, and the scenery south of the river is equally beautiful as that which lays to the north. Crossing the North and South Canadian Rivers we noticed more white sands, and occasional outcrops of sandstone and shale. South of McAlister, Okla., we followed roads which curved through valleys and over ridges while on either side were tree covered hills. We were crossing the western spurs of Pine Mountains and soon were atop a high divide where there were outcroppings of huge boulders and sandstone slabs. The bedding planes of the rocklayers were tilted and bent upward at various angles. The scenery from the divide was beautiful. There were wonderful vistas of valley, ridge and hills covered with forest verdure, while away to the east ranges of hills reached away until lost in the purple haze of dim distance.

From the divide the road ran through grassy glens set between rounded knolls. At one place a silvery lake was framed in a background of green hillsides.

We noticed a large quarry in a steep hillside. There were various colored sandstone and the layers were bent and folded. Passing on to the lower land near Atoka and Durant, Okla., the rocks were hid beneath the loamy soil. After crossing the Red River to Denison, Texas, we traveled highway 75 through corn and cotton fields toward Dallas. We were now following the line where the Eastern Grand Prairie merges into the ranchlands of the North Central Plains. There were no rocks anywhere in sight, there was only long stretches of black Texas soil.

After passing through the busy city of Dallas we turned southeast still on highway 75. Small pebbles along streams and some sandy areas were the only rocks noticed along the way. Stopping at a small town for gasoline we saw some fine petrified wood which had been used for lining a pool of water. Annual rings were distinctly marked in the blocks but we failed to find out where the wood came from. About halfway between Dallas and Houston the open prairie changes to the timber lands of Eastern Texas. Here the road runs mile after mile in a nearly straight line through forests of oak and pine. Arriving in Houston, Texas, late in the evening we planned a trip to the gulf for the next day and retired for the night feeling the day had been well spent in viewing the scenery and observing rock formations along the way.

Sunday morning, June 25, we left Houston driving over the partly constructed Gulf Freeway which when completed will be a wonderful six lane highway to Galveston. Turning eastward and crossing the Houston Ship Channel we next came to the San Jacinto Battleground where the Texans won their freedom from Mexico. In memory of this battle a great monument was built the shaft of which towers 570 feet high and is surmounted by a huge stone star representing the Texas Republic. In the base of the monument there is a museum containing documents and books concerning Texas history. There were other interesting collections in the museum including some ancient Indian Artifacts. The monument is built of reinforced concrete faced with fossilized limestone. Many of the fossil shells in the stone were nearly whole, and appear to be of the same species as those which occur on the gulf beaches at the present time. The stone is quarried at Leander, Williamson County, Texas.

After viewing the museum collections we were elevated to the observation room at the top of the monument, where we had a splndid view of the battleground and surrounding plain. Near the monument the great battleship Texas lies anchored in Buffalo Bayou.

Continuing on the way to Galveston, Texas, we passed through Washburn Tunnel, which is a well lighted tube 90 feet under the water of the Houston Ship Channel. The channel is a 50 mile waterway connecting the city of Houston with the gulf. The channel has been dredged

to a depth of 34 feet admitting ocean vessels from all world ports. There is a turning basin for ships inside the city.

From Washburn Tunnel on the way to Galveston there were oil fields, refineries and chemical plants along the roadside. Crossing a two mile long causeway over West Bay to Galveston Island we had our first view of the gulf. In the city of Galveston we walked along the great sea wall which was built after the town was destroyed by a hurricane and disastrous tidal wave. We observed the large granite boulders which form a breakwater at the foot of the wall. We watched the white-capped breakers cresting the incoming waves, and looking far out over the water we saw the gulf's curving surface dip under the southeastern horizon. Walking out on a long pier, we saw thousands swimming in the salt laden water, while other thousands of people lay on the beach sands securing a deep tan under the warm Texas sun.

Before leaving the island to return to Houston we went down to the beach and collected a variety of quartz pebbles and some fine sea shells. Many million tons of broken shells have been dredged from Galveston Bay. They have been used for concrete mixing and road building. It is from such immense accumulation of material that many limestones have been formed and it is interesting when travelling to note the sources of sedimentary deposits.

The next three days were spent in visiting relatives, sightseeing in and around Houston and in securing information about southeast Texas industries. In the city of Houston there are many kinds of trees and shrubs. There are the native sycamore, pecan, ash, elm, oak and pine. Sub tropical species of trees and ornamental shrubs abound, conspicuous among these is the white flowering magnolia and palm trees. At Herman Park there are miles of tree bordered driveways where long streamers of Spanish moss hang from the tree limbs. These moss covered trees present an unusual and most weird spectacle. Also at Herman Park we visited the zoo and the Museum of Natural History. The museum contains many instructive collections among which are many fine mineral specimens and Indian artifacts. The artifacts are remains of ancient southwest Indian tribes. The minerals in the cases are arranged in accordance with their chemical classification. The oxides, sulphides, carbonates, phosphates and silicates being placed in separate groups. This method of classification has many advantages over others and is very helpful in the study of minerals.

We were fortunate in meeting Mr. K. A. Vines who is director of the museum. Mr. Vines was very courteous and answered our many questions about the museum collections, and it was a pleasure to listen to his description of Texas Minerals and mineral resources.

While in Houston we saw a fine rock crystal sphere in a down town novelty shop. We also did some rockhounding by collecting different colored quartz pebbles from driveways and parking lots, the pebbles probably came from nearby Texas streams.

A sample of perlite was given to us by a friend who had worked at an experimental perlite processing plant in Houston. We were informed that perlite is a variety of obsidian or glassy lava and contains 3 to 4 percent of water. The perlite consists of small rounded grains and is blue to gray in color. Perlite expands and pops like corn when heated to a high temperature; it is used for building blocks and insulation.

Southeast Texas has many natural resources and numerous industrial plants are located there. At Texas City there are chemical plants, oil refineries and a great steel plant which is supplied with iron ore from East Texas; the ore bed is so shallow that it is mined by draglines. Natural salt domes occur near Corpus Cristi from which alkalies and chlorine are produced. Plants at Freeport and Valesco separate magnesium from sea water: Magnesium is the wonder metal which is lighter than aluminum and nearly as strong. Scores of oil fields surround Houston and 85 per cent of the nation's

sulphur is produced in the area.

We would like to have stayed longer in the Houston vicinity, but circumstances made it necessary to be back in Granby, June 30, and in order to make the trip in one day we had to make an early start. We regretted there was not time to make long stops to examine rock formations and collect specimens.

Travelling north from Houston on highway 59 we soon came to the forest region of eastern Texas. Several beautiful tree bordered streams were crossed and for miles the road ran in nearly straight line through pine forests. Near Goodrich the land rises above the level plain and is broken into rounded knolls and gently rolling slopes. Here the grassy openings surrounded with green pine trees formed picturesque scenes. We were now travelling through the heart of the piney woods and beyond Lufkin where the road again rose above the plain, there were widening vistas of tree covered knolls.

At Carthage, Texas, we changed to highway 79 and soon crossed the state line into Louisiana. With the exception of some small pebbles no rocks had been observed along the way. Whatever outcrops there may have been were hidden by the thick growth of trees.

At Shreveport, La., a stop was made at the Louisiana State Exhibition Building. The building is circular in shape and around the walls is a special arrangement of cases showing small models of Louisiana industries. Agricultural products and methods of crop growing were illustrated. There were other models showing the machinery, methods and processes of salt mining, oil well drilling and oil refining. Other cases showed the rock formation and different strata of the oil domes. Anticlines are where the rock layers are bent and curved with the convex side up. Synclines are formed when the layers are bent so that the convex side is down.

There was also a fine display of Louisiana minerals besides minerals from other states. The fossil collection was very interesting. An unusual specimen was a large fossilized pine knot which was estimated to be 100,000 years old.

The stone used to finish the Exhibition Building was quarried in Missouri and is called Missouri Rose Marble.

From Shreveport we followed highway 71 north into western Arkansas. The next stop was made at Texarkana which is noted for its great oak and magnolia trees.

North of Texarkana the highway crosses Red River and runs through the mountains between the Red and Arkansas Rivers.

Outcrops of sandstone and shale were observed at Gullimen. Near Wicks there was tilted rock strata, and views of distant hills. At Cove the higher hills were shaded with bluish haze.

Mena, Arkansas, is located in a beautiful setting of hills and between there and Waldron the road runs through the higher ranges.

Blue Mountains reach elevations up to 2,800 feet above sea level. Here are primeval forests covering towering heights which extend far to the eastward. Near at hand there was an array of gorgeous colors in the foliage of pine and hardwoods. Lovely valleys were enclosed by verdant hillsides, and the more distant mountains were veiled in purple haze.

Near Waldron, Ark., there were strip pits of coal, and the widening valley was rimmed by haze covered hills.

Crossing the Arkansas River at Fort Smith, Ark., we next came to the Boston Mountains which are located between the Arkansas and White Rivers. Starting at Mountainburg on the southern side, the Boston Mountain scenic drives are alluring. Far below the roadway Lake Fort Smith nestles in a deep depression between high hills, their tree covered sides forming a verdant framework for the sparkling silvery water of the lake.

The scenery on Highline Drive was enchanting. Great ledges of sandstone were piled high above the road on one side and deep gorges hundreds of feet below the other side. High ranges of forest covered hills were outlined in purple haze far away to the east.

Winslow, Ark., is on the crest of the divide and is 1,740 feet above sea level,

it has the highest altitude of all Arkansas towns. Mount Gaylor is the highest place and the most scenic spot on the highway.

Coasting down the mountain slopes and passing through Fayetteville we soon crossed the state line at Noel, Missouri. Here in the southwest corner of the state is some of the most picturesque scenery of the Missouri Ozarks, here are many clear spring fed streams. Along Elk River near Noel are high hilltops from which a widespread view of forest and stream may be seen. In travelling the curving roads there is an everchanging panorama of scenic beauty.

At Noel, highway 71 passes under limestone cliffs which overhang the roadway 30 feet or more. At some places underground water channels have been enlarged to form caverns with beautiful crystalline forms. The highway runs near Ozark Cave, Pruits Cave and the Bluff-dweller Cave. With darkening shadows of the closing day, there ended a delightful trip through a wonderful land.

100,000-YEAR-OLD TREES ARE FOUND IN EXCAVATION

Trenton, N. J., Nov. 29—Evidence that Southern white cedar is no new comer to the forests of Southern New Jersey was reported today by Commissioner Charles R. Erdman, Jr., of the Department of Conservation and Economic Development.

While excavating for the relocation of Route 25 about two miles southeast of Paulsboro, N. J., Frank I. Carpenter, State highway supervising engineer, discovered almost perfectly preserved sections of trees in an upright position beneath 15 to 20 feet of sand and gravel. He brought these to the attention of Henry F. Herpers, geologist for the department, who upon investigation found that the rapid deposition of Cape May sands and gravels, estimated to be over 100,000 years old, had preserved the tree growth. Samples of wood were identified by Elwood B. Moore, chief of the Department's Bureau of Forest Management, as Southern white cedar. the scientific name of which is Chamaecyparis thyoides (Linneus).

Mr. Herpers explained that the Cape May gravels are believed to be somewhat older than the last glacial epoch known as the Wisconsin age. Finding a layer of peat and wood under the Cape May gravels would indicate that the wood samples are at least 100,000 years old and possibly older. Mr. Herpers pointed out that this and other important discoveries are often reported to the Bureau of Geology by observant individuals, such as Mr. Carpenter, who come upon unusual geologic conditions in connection with their work.

During the past century large cedar logs were "mined" from the swamps in the southern part of the State, particularly along Dennis Creek in Cape May County. These logs were estimated to have been buried in the swamp for 5,000 years. The recent discovery near Paulsboro is the first definite information that the tree, now so common in the Pine Barrens, was also growing in the locality over 100,000 years ago.

Southern white cedar is considered one of the most valuable of native coniferous trees and is found growing in dense stands or mixed with swamp hardwoods along the streams and in the fresh water swamps of the coastal plain.

The above item, taken from the Nov. 29, 1950, issue of the PATERSON EVENING NEWS, Paterson, N. J., was sent in by Hobart L. Jones, 113 Adrian Street, Pompton Lakes, N. J.

Renews For 5 Years!

Editor R & M:

Please accept my renewal for five (5) years at the going rate. I have a complete file of R & M since your initial issue and see no reason to put myself at an additional bother of subscription correspondence. To me, keeping up subscription is a chore and the day for renewal comes around all too soon.

Marion E. Jasperson
Indianapolis, Ind.

February 19, 1951

HOW HOT IS KIBBLEHOUSE QUARRY?

By C. A. THOMAS

706 Church Street, Royersford, Pa.

The writer's favorite zeolite locality, Kibblehouse Quarry, near Perkiomenville, Pa. (Montgomery County) has produced many an odd specimen. One of them comes to mind which was not collectable in good specimens. Several years ago, a large rock mass, perhaps more than twenty tons in weight, had lain untouched by quarrymen until recently moved. Visitors could have seen, had they cared to climb up on the rock, a coating of very lovely pinkish lavender dog-tooth or scalenohedrons of calcite, somewhat clear and undamaged by rockfalls. At that time, a few small flat sections of the calcite druses were chiseled from the parent rock, a brownish colored affair of trap rock. It was decided, tentatively then, that the calcite had changed color due to exposure to the hot sun, which may be true. However, there is some evidence to show that the calcite druses were or may have been subjected to radioactivity. The phosphorescence of this calcite compared well with the famous Texas blue fluorescent-phosphorescent calcite. Inch thick veins from the same wall, the left wall about halfway into the quarry, reacted in varying strength under the Mineralight, giving a very pleasing aurora borealis effect with the brightest blue phosphorescence near the wall contact surfaces.

There is now a question in my mind as to whether the sun actually caused the lavender colored calcites or whether they were originally formed with the amethyst hue. Some weeks ago, a cross section of ordinary rocks were collected with the idea of checking on rumored radioactivity. At least a dozen different pieces of rock were collected from the vicinity of the odd calcite and ten pounds or so from other points in the quarry. They were destined to be used to attempt a photo plate test for radioactivity, when the Clarkstan Corporation sent the writer one of their modernized spintharascopes. After checking the efficiency of this 'alpha counter' with known radioactive specimens from various parts of the U. S.. the Kibblehouse assortment was carefully checked. The possible fluorescence of the zinc sulfide screen, in the counter, was quenched thoroughly with the red filter glass cap which comes with this sensitive instrument and the eyes were dark-accustomed for at least thirty minutes before attempting to see alpha particles as they impinged on the sensitive zinc sulfide screen. By some freak of coincidence, the first two freshly fractured rock pieces from the left wall area of the quarry, were immediately active. However slow the particles were in coming to life, there definitely were alpha particle impingments on the screen and the two lens system enhanced the short though vivid reaction. It would be difficult to trace the positive specimens to their place *in situ* without a Geiger counter and even then it is doubted that the more heavily concentrated radioactive rock could be defined. All other Kibblehouse specimens showed negative in further tests with the Clarkstan counter. It would be a terrific task to discover just where the heavier concentration of this radioactive rock is located at Kibblehouse Quarry.

Just what the mineral is that caused the positive reaction is, so far, unknown to this writer. Perhaps someone else, who has delved into the problem may enlighten readers by writing to this magazine about their experiences with 'Hot' stuff (however cool that 'hot' may be) from Kibblehouse Quarry. Photos have not yet been made from the suspected material, at least by this writer.

It may be noted, here, that autunite from various localities is gratfyingly reactive to the counter and other, more heavily 'loaded' specimens, such as gummite and Great Bear Lake uraninite (Canada), were very active with the new Clarkstan alpha counter.

APACHE TEARS AND OTHER MINERAL ODDITIES FROM THE MOGOLLON MOUNTAINS, NEW MEXICO

By DON ALFREDO
322 Linda Vista, Las Cruces, New Mexico

"Discovery" does not necessarily imply that the discovered article or material has never before been seen by man, for it is also defined as "finding and bringing to the knowledge of the world." With this as a basis I take the liberty of proclaiming my friends, Mr. and Mrs. Albert F. Cline of suburban Las Cruces to be the discoverers of an extensive deposit of Apache Tears in the Mogollon Mountains, some forty miles northeast of the town of the same name in Catron County, New Mexico.

In August, 1949, the Clines were rambling about in the vicinity of their summer cabin. On one of their rambles when rockhounding was not of primary consideration, they stopped for their picnic lunch at a small cabin by the roadside—a cabin which appeared deserted or at least infrequently occupied. During the meal hour their attention was drawn to the numerous black, glassy pebbles which abounded in the area, and a rather hasty exploration of the vicinity revealed that these became more and more bountiful the farther one moved down the nearby arroyo, over the ridge beyond, and thence into the less-steep arroyo beyond that. At this time the Clines may not have been qualified rockhounds. At least they were quite new in the activity, and the nature and proper designation of these interesting pebbles was a complete mystery to them. However, a number of them were picked up and carried home where little time was lost in obtaining for them a classification of obsidian nodules or "Apache Tears." In succeeding months they have shown them to many persons and have made extensive inquiry as to who, if anyone, may have known of the existence of this deposit before they chanced upon it. The area is almost wilderness country; residents are very few and widely scattered; although the site is within three hundred yards of a state highway, the highway is not a well-travelled one and a tourist who failed to stop and disembark at or near this cabin would not see the evidence of the deposit, and of those who might stop only a few would be likely to be rockhounds or casual picker-uppers of odd rocks. The cabin occupant, present or past, apparently was quite aware of their existence for his dooryard contains much brought-in perlite and other materials in which Apache Tears are quite abundant and the several nearby perlite prospects show quite clearly that the nodules are weathering out of the perlite. It is quite apparent that this unknown prospector has not publicized his Apache Tears (perhaps he has cussed them for the fact that they must be screened out of the perlite) and so far as the Clines or the Perkinses (that's my wife and me) have been able to ascertain they were, until now, "unknown" —for all practical purposes. And so, Clines, a salaam to you!

A few months ago we Perkinses were guests at the Clines' for a few days, and among the spots they insisted that we visit was "their" obsidian bed. We had made numerous visits to the mesas west of Las Cruces in search of Apache Tears, and on any such search a find of a half-dozen of them in an afternoon would be considered—on an average—well worth while. I have often said that they are plentiful enough to make the search reasonably easy and scarce enough to make it interesting. But with our local source in mind, the idea of spending, say, an afternoon picking up a half dozen Apache Tears—or even a full dozen—didn't thrill me particularly. Not that I don't like Apache Tears—I find them very interesting—but it seemed that there might be more interesting things in the Mogollon Mountains than Apache Tears. Before declining the invitation or casting a negative vote, however, I thought it best

to inquire as to the size of the deposit and the quantity of obsidian available, also how many miles one had to hike to the spot. The information received was rather incredible. All the nodules one would want to carry and all within a few hundred feet of the parking space! WELL! LET'S GO!

To facilitate advising future visitors to the site, let us assume that they are approaching the Mogollon Mountains (by the way, Mogollon is pronounced "moe go YONE", not "moe GOLL on" or "MOGG o lonn" from the west—from Reserve, N. M., Springerville or Alpine, Arizona, or Silver City, N. M. via Glenwood—via United States Highway No. 260. Having reached the junction of this highway with state road No. 78 (New Mexico) at the settlement known as "Alma," turn east on the latter, taking departure at this point as mileage zero. I am told that from this point east one cannot make a wrong turn. There are roads which lead off from No. 78, but they all either dead-end or return to No. 78—so having committed oneself to No. 78, there are only two things possible—keep on going or turn around and go back.

From Alma, No. 78 climbs gradually for the most part, but with a few rather steep grades, and by a series of moderate curves up onto a large area of grassy mesa from which superb views of the mountains are guaranteed to thrill. This grassed land soon gives way to moderately timbered mountain country where the road skirts some rather steep-sided peaks and then starts a gradual drop into a valley. This gradual drop rather quickly changes to an abrupt one, and by a series of nearly "hairpin" turns one drops into the near-ghost town of Mogollon very soon after you have seen its extensive mine and mill structures and mine dumps on the farther side of the canyon. How near is it to a ghost town? In the boom days its population was several thousand; there are now less than a hundred residents. The general store once employed twelve clerks; Mr. Holland, the proprietor, now operates it alone. The experienced mineralogist can doubtless find much worth-while material on the many mine dumps, but we novices loaded up with what later proved to be mostly glassy adularia feldspar in fine-grained, greenish rock, diabase (trap rock), and platy quartz with rock crystal in cavities. After the inevitable re-sorting and discarding we eventually found a dump where we obtained an abundance of excellent clusters of rock crystal, and a prospector designated some of our specimens as chalcocite. One could spend many hours "poking around" in this old town and among its mines, mills, and dumps, but we are in search of Apache Tears. Mileage at Mogollon—8.

From Mogollon prepare for a real climb. The road surface is gravel and it is well maintained, but almost immediately on leaving Mogollon it begins a very steep climb with turns which are completely "hair pin" and if they were more so they would have to be switchbacks. The road narrows and is posted as for single lane traffic with numerous turnouts. It is a second or low gear proposition much of the way and the timber is so tall and so dense that only occasionally is there any view of the countryside available. Perhaps it is just as well—one's eyes shouldn't stray far from THIS road! Eventually, of course, the road "tops out" on or near the crest of one of the higher ridges of the Mogollon Mountains, and for a time it consists of a series of gradual rises and drops with frequent but brief views through timber breaks—and the views are magnificent. Before starting the downward run on the other side of the ridge the road crosses several awe-inspiring rock slides: Barrel-size boulders covering an area perhaps a hundred feet wide from a point high up the slope and not in sight at the right and disappearing in the canyon below at the left. In crossing these, one can only hope the mass won't start moving again until safely across, but probably the mass has remained immovable for thousands of years.

The drop down the reverse slope of the ridge is less steep than was the ascent, the road surface is somewhat superior, and

the view more frequent and perhaps more impressive. Wild life is abundant; a view of more than one deer is almost guaranteed, and careful watching may be rewarded by brief sight of a bear. At mileage 25 a brief view of the Willow Creek Ranger Station and the nearby dude ranch may be had—down the slope to the right. From here the descent becomes more gradual, grassy open spaces frequent, and the timber smaller and more scattered.

At mileage 30 a sign indicates Quaking Aspen Canyon. A short distance up this grassy valley will be found a small ledge of red amygduloidal basalt, in many of the larger vugs of which there are good specimens of chalcedony roses, many of them loose in the vugs and easily removable.

Discounting the (perhaps) half mile side trip into Quaking Aspen Canyon, at mileage 33 pass junction of road to Negrito Lookout (a forest fire observation station) and at mileage 35 cross straight through a "four corners" one branch of which is designated by a sign as the access road to a ranch, and now pass over several miles of fine, grassy, low rolling hills—excellent range land devoted to that purpose. On again entering moderately timbered land and with the road making rather steeper up and down grades, carefully watch on the right for a small cabin, tar paper-sided, at mileage 42. Although this cabin is small, it is in plain sight and not over one hundred feet from the road. It is the only such building within miles, and it can hardly be missed. Park here.

Walk back down the road to near the bottom of the first dip and on the east side of the gully observe a perlite prospect. Small fragments of the perlite may be removed from the vein by hand; large chunks require the help of a pick or

One of the author's several attempts at Apache "Tear" artistry. Photograph made with Apache "tears" arranged to represent head of an Apache Indian.

pry bar, but regardless of their size, these chunks of perlite can be broken up into sand-size grains using only one's fingers, and more than likely such action will expose one or more Apache Tears. And this is not all that the perlite may contain, for we thus uncovered many "Goshawfuls"—my own designation of odd-shaped pieces of rock or mineral matter for which I have obtained no "official" classification and which will hereinafter be designated as "Goshawfuls." But this is not the prolific source of the "tears."

Walk back to the cabin and continue from it down and across the gully which roughly parallels the road and is partly spanned nearby by a partially dismantled rock crusher. Continue, bearing slightly to the right, over the next ridge and from the far side of this observe two small perlite prospect holes, neither of them more than four feet deep and one of them perhaps containing water.

You have probably found many Apache Tears already, particularly if you have now and then scraped off the light soil cover of pine needles, but in the gully where you now find yourself we Perkinses —two of us—picked up over eighty pounds in a total of about six hours collecting. The Clines were likewise occupied but since their activity was somewhat reduced by the necessity of keeping in sight of their small son—who might otherwise have wandered over into Arizona—their haul was not so great as ours.

The Las Cruces mesa Apache Tears are rather generally rough-surfaced. At first glance they appear somewhat like the surface of coarse carborundum cloth. At this location the tears have no such pitted surfaces, but the surfaces are likely to have several "gracefully" rounded depressions, the entire surface being smooth to the touch and frequently of a silvery sheen over a black body color. We found several on small areas of which were streaks of red obsidian. Despite our large "haul" we left many behind and as our exploration was limited to this gully it seems likely that additional supplies may be found in other gullies nearby.

And all the time we were picking up Apache Tears we were picking up Goshawfuls—or wondering whether we should take them or leave them. They were as abundant as the tears and fully as interesting, but the tears were our first love and we decided to concentrate on them. The Goshawfuls are in infinite variety and of the most absurd, unbelievable, bizarre (words fail me) shapes imaginable. Looking back, I wonder if we shouldn't have brought out more of them, for we've never seen such an accumulation of mineral oddities. Some of them resemble eggs which burst while being boiled, others (perish the thought, but it's true) look very much like bird or small animal entrails. Many could easily be mistaken for snails—recent or fossilized—and the number which resemble raspberries or similar rough-surfaced berries is simply amazing—and the colors, while usually of pastel shades and seldom of any brilliance, are very often proper for the objects or critters I have compared them to. Size?—from as big as a pea to as big as a clenched fist. Yes, I'm sure I should have collected more of them. They would make (except the entrail variety, perhaps) interesting jewelry sets with no processing other than installation in suitable mounts, or perhaps they would in some instances take a little surface polishing although their internal texture is usually ganular and not likely to yield a pleasing surface by deep cutting or grinding.

Do I recommend this as a trip for rockhounds? It all depends on how much you like Apache Tears (and Goshawfuls) and where you are. I would hardly expect anyone to travel all the way from the east coast just to visit this location, but for one travelling in this part of New Mexico and not unwilling to leave the beaten path—I think it would prove worth while. To us who do most of our collecting on the hot sands of the desert or in the mean and treacherous nooks and crannies of the rough and rugged mountains which stick up—almost timberless—right out of the desert "flats" an opportunity to do some collecting—any kind of collecting—in a mountain pine forest

with the shade of timber and the coolness of altitude was indeed a welcome diversion.

I need not point out that Apache Tears are cutting material. Being glass they are bright on a fracture surface and can be given an equally beautiful polish by simple grinding, sanding, and buffing operations. For the non-lapidary they are of limited usefulness but can be worked up into objects of doubtful art, such as the one illustrated in this article, or can be bonded with plastic to make unusual paper weights, pen stands, lamp bases and similar novelties. Drilled, but otherwise unprocessed ones, graduated as to size, make handsome and out-of-the-ordinary strings of beads.

Mileages quoted are measured only roughly but are believed adequately accurate in view of the fact that the landmarks mentioned are hardly unmistakeable and are, in general, the only landmarks of value. The map was prepared from New Mexico State Highway and United States Forest Service maps but is also to be considered as only reasonably accurate.

PLAN YOUR COLLECTION

By CHARLES R. BLYTH, Jr.

"Strawberry Hill", Burlingame, California

Mineral collecting is a wonderful and fascinating hobby to which its devotees apply themselves with rare enthusiasm. However, it seems to me that a good many collections which could have been objects of great praise and admiration were spoiled for this reason: The collectors did not limit themselves to the collecting of one or more defined types of minerals.

To illustrate this, a collection of one hundred specimens of mica, and nothing but mica, is far more valuable and out of the ordinary than two or three hundred specimens of miscellaneous minerals. Why? Because probably thousands of mineral enthusiasts are collecting assorted minerals while few if any are specializing in mica minerals. It is true that a veteran collector who has a considerable financial backing has had the time and money to assemble a gigantic collection containing a large amount of nearly every type of mineral; but the average collector whose time as well as money is limited can not gather together such a collection. He can, nevertheless, limit himself to one, two, or even five or six well defined categories and thus build up a collection which will be considered by all to be outstanding; one that will be the envy of every collector.

There is a large variety of fields from which to choose your specialty. You may prefer to stick to one family of minerals (such as mica, quartz, corundum, etc.). Or you may prefer to collect groups such as fluorescent minerals or groups classified by cleavage, hardness, color—in fact, anything. Then, too, you can collect the books devoted to your particular field.

Just one more thing. By specializing in a field you will learn a great deal about the type of minerals you are working with; more perhaps than any other collector. Don't keep this information locked up in your collecting room. You can do a great service to your fellow-collectors by passing this information on to them through the medium of mineral magazines such as ROCKS AND MINERALS. These magazines are working hard to please you, and it is yours—and my—job to help them.

To Start Over Again!

Editor R & M:

Guess I will have to start collecting all over again. The University of Oklahoma at Norman has my collection of 1200 specimens.

Jay E. Gilkey
Oklahoma City, Okla.

February 1, 1951

WORLD NEWS ON MINERAL OCCURRENCES

Items on new finds wanted. Please send them in.

Abbreviations: xl—crystal xled—crystallized xline—crystalline

ALABAMA: A nice specimen of calcite (onyx), a white and brownish mass, 4 x 6 inches in size and weighing 4 lbs., was donated recently to R & M by Sgt. Edward Bourne, of the Peekskill, N. Y., Armory. The specimen comes from a large cave located about 5 or 6 miles south of Talladega, Talladega Co., Ala., and was collected in November, 1950, by little Patricia Foran, the 10 year old daughter of Sgt. and Mrs. James Foran, while vacationing in that area with her father and mother. Sgt. Foran, of the U. S. Army, is at present stationed at the Peekskill Armory (National Guard) as an instructor.

Sgt. Bourne, a cousin of the Editor of R & M, made a swap with Sgt. Foran so that R & M could obtain the handsome onyx specimen. Incidentally neither of the two soldiers, nor even Patricia, are mineral collectors.

The Forans suffered a heavy blow recently when their son and little Patricia's big brother, Pvt. James Foran, of the U. S. Army, was killed in action in Korea on February 5, 1951. He was 18 years old on the day he died.

ARIZONA: Some interesting gypsum masses and crystal clusters, white in color, which come from the Arizona Chemical Co.'s old property which is now idle and located about 2½ miles from Camp Verde, Yavapai Co., Ariz., were recently donated to R & M by Edison Thacker, Box 446-A, Camp Verde, Ariz. There is an immense salt deposit at the locality which not only produces halite and the above gypsum but also glauberite, mirabilite, and thenardite, reports Mr. Thacker.

Mrs. Peggy M. Kelley, of the Rock House, South Mountain Park, Rt. 5, Box 553, Phoenix, Ariz., contributes the following:

"I am sending under separate cover a piece of Samarskite-Polycrase, in the rough crystal form, found near Kingman, Arizona. The identification and analysis were made by the Atomic Energy Commission, 10.2% U_3O_8. I have been reading about the new mineral finds in each state in the copies of ROCKS AND MINERALS and so far had seen no mention of this particular type of material so thought it might be of interest to you."

The uranium specimen sent in by Mrs. Kelley is a very nice lustrous black crystal with a brownish crust; it is 1½ x 2 inches in size.

Another contributor is David S. Smith, 25 Calle Belleza El Encanto, Tucson, Ariz. He has sent in some small but very fine dark green crystals of epidote imbedded in white calcite which he collected on some mine dumps around Marble Peak in the Santa Catalina Mountains, in Pima County, Arizona. A note from him reads:

"I have done some fairly thorough exploring in the region and find that it is well supplied with good crystal specimens of epidote which occurs in limonite as well as in calcite. Some of the epidote crystals range up to 2½ inches in length and ⅜ inch wide."

David is only 15 years of age but his collection, which numbers 300 specimens, is a very good one as it has won a number of prizes at various exhibits (3rd prize at the Arizona State Fair). He is quite an extensive trader.

ARKANSAS: Some years ago a mineral was found in Arkansas which was thought to be related to xonotlite and was supposed to contain sodium. In 1891, J. Francis Williams suggested the name natroxonotlite for it.

Dr. Waldemar T. Schaller, of the U. S. Geological Survey, has re-examined the mineral, and has renamed it miserite.

after Dr. Hugh D. Miser. who was born in Pea Ridge, Ark. Dr. Miser is also with the U. S. Geological Survey and has contributed much to our knowledge of the geology and mineralogy of his native state.

Miserite is a pink silicate occurring at Potash Sulphur Springs (now called Wilson Mineral Springs) about halfway between Hot Springs and Magnet Cove, Ark. It is a constituent of the (quoting Williams) "very beautifully banded metamorphosed shales" in which "occur the beautiful pink (miserite) and white wollastonite crystals which were exposed when the rock was blasted open in building the road" (from Lawrence Station to the Springs hotel). Dr. Schaller collected a number of specimens from the boulders in the nearby creek bed and which undoubtedly are pieces resulting from the blasting. These specimens polish well, and the contrasting pink miserite, white wollastonite, and greenish aegirite present a very attractive appearance. For further information on the miserite consult "Miserite from Arkansas; A Renaming of Natroxonotlite," by Dr. Waldemar T. Schaller, AMERICAN MINERALOGIST, Sept-Oct, 1950, pp. 911-921 (Dr. Walter F. Hunt, Editor, University of Michigan, Ann Arbor, Mich.)

CALIFORNIA: Since the early days of the gold industry in California. diamonds have occasionally been found in gold placers. More than 300 good quality diamonds have been taken from the Cherokee district placers in Butte County, California.

Mineral Information Service, July, 1950, p. 7 (Issued by Division of Mines, Ferry Bldg., San Francisco, Calif.)

COLORADO: An interesting letter was received recently from W. A. Brown, of the Thunderbird Hobby Shop, 301 Belleview Ave., La Junta, Colo. It is as follows:

"I am not in this (advertising) for the money I can make out of it but as a hobby as I have a bum heart and the work keeps me interested in curing my ailment and it seems to do the job as I am doing fine. I had a good job when I retired. I was a passenger conductor on the Santa Fe Chief but now I keep up with a miniature railroad and a small grandson.

"I will send you a couple of cabs made from our Rose Garden Jasp-Agate found 50 miles south of La Junta by my friend, another retired railroad man, Mr. G. Ruegg and locally the rock is know as Rueggite."

Four good size cabochons were received of this beautifully brownish and reddish jasper-agate.

CONNECTICUT: A locality for aegirite is the abandoned Flatrock granite quarry at Waterford, New London Co., Conn. The aegirite occurs here as greenish crystals, often associated with black plates of ilmenite, in granite.

DELAWARE: Dr. A. C. Hawkins, 826 First Place, Plainfield, N. J., donated recently to R & M a most interesting specimen from Delaware. The specimen consists of dark olive-green crystals of apatite in gabbro and comes from the State's most noted locality, the Brandywine (Hubbard) quarry, in Wilmington, New Castle Co., Del.

A note from Dr. Hawkins reads:

"The specimen is from the very old Brandywine quarry which is along Brandywine Creek in Wilmington, Del. This quarry, of course, was abandoned years before I reached the locality. This specimen was obtained from the natural science society in Wilmington."

FLORIDA: Petrified shark's teeth. loose, brownish and opalized, have been found at Mulberry, Polk Co., Fla., by Mrs. Rena Allen, formerly of Daytona Beach, Fla., but when this item was being prepared she was on her way to Tucson, Ariz., where she will make her future home. One shark's tooth sent R & M was ½ x ¾ inch in size.

A short note received from Mrs. Allen, just before leaving Florida, reads:

"You will be surprised but I have sold everything, that is my two homes, and am moving out West where I hope

to locate in Tucson, Ariz. Have packed all my museum and taking it along; some boxes will be taken in the car but others will go by freight. Daughter and I will go together in our new Buick. I shall stop at every rock outcrop on the way out, hoping to pick up some interesting minerals in so doing. Please hold my copies of the magazine until I get settled in Tucson."

GEORGIA: The Georgia Mineral Society NEWS LETTER in its Jan-Feb., 1951, issue, p. 5, report a rutile occurrence near Atlanta, Ga., as follows:

"On August 5, 1950, Mrs. G. C. Littlefield of Stonewall in old Campbell County (now Fulton County), sent in an interesting specimen of rutile. The sample is deep red in color and shows twinning. It was obtained seven miles south of College Park on the Roosevelt Highway."

The Editor of the NEWS LETTER is Dr. A. S. Furcron, 425 State Capitol, Atlanta, Ga.

IDAHO: Nice specimens of coarse xline dark greenish-black (looks deep black) hornblende are found near Teaken, Clearwater Co., Idaho.

ILLINOIS: Nice xled specimens of amber-yellow fluorite have come from the J. L. Davis fluorite mine, Cave-in-Rock, Hardin Co., Ill.

INDIANA: Last October the Editor with Mr. and Mrs. Howard V. Hamilton of Vandergrift, Penn., made a 10-day trip through Ohio - Indiana - Kentucky. Many localities were visited. a number of collectors called on, and quite a lot of specimens were brought back. One collector visited was Walter Reeves of Greencastle, Ind., who not only received us warmly, but spent a whole afternoon guiding us to localities and in addition loading us down with minerals from his vast stockpile. One interesting specimen donated to the Editor was petrified wood that was brown in color and 2½ inches in size (a limb section). Mr. Reeves found the specimen himself not far from his home in a small stream called Dry Branch which is near Greencastle in Putnam Co., Ind.

IOWA: In the February, 1951, issue of NEWS NUGGETS, the official journal of the Central Iowa Mineral Society, (Mrs. R. G. Hays, President, Rt. 1, Buffalo Road, Des Moines, Iowa). F. A. Brown has an interesting article on two localities for selenite. Locality No. 1 is about 4 miles north and a little west of Granger, Dallas Co., Iowa, where the road dips sharply to the river valley; three-fourths of the distance down is the locality. Here in a gray clay, very sticky when wet, are selenite crystals. There seems to be about 2 feet or less depth of the crystal producing band. In the productive clay are many small areas black in color. It is in these black areas that the crystals occur, lying horizontally. The crystals are usually spear pointed or in fish-tail twins. Marcasite nodules also occur in the black areas. These nodules break down releasing sulfuric acid which reacts with calcium carbonate to produce selenite crystals. He secured specimens one end of which is marcasite and the other is selenite. There are crystals with black inclusions, or with unaltered marcasite.

Locality No. 2, on U. S. highway east of Des Moines, one-quarter mile east of Four Mile Creek, and an eighth-mile north of the highway, is a remnant of a never-too-large coal mine dump. A part of this waste dump are rocks called "Niggerheads" by the miners, but this is not to be confused with the "Coal Balls" found at many mines in this locality. These Niggerheads are a product of muds, cracked by drying and the cracks filled by crystalline calcite. This, hardened into stone, formed septarian nodules. In these Niggerheads are the selenite crystals which are small, perhaps one-eighth inch long, less than half as wide, and very thin. These radiate from a center usually in rosettes or as balls. most deeply impregnated with hematite, some black and glistening, some brown, gray and even white or clear. Unfortunately there is very little if any more material left at this

locality. There are, however, small pieces of coal plants, stems or trees, iron pyrites being the petrifying agent.

KANSAS: Some months ago someone sent R & M an interesting rock crystal (¼ inch pebble) which was collected in Pottowotomie Co., Kans., but the exact locality was not given.

KENTUCKY: E. H. Sarles, 2026 Elm Avenue, Norwood 12, Ohio, has donated to R & M a greenish mass of glauconite which comes from Buffalo Hollow, Lincoln Co., Ky.

LOUISIANA: Robert E. Brumby, Box 296, Franklin, La., has sent R & M a number of chert specimens which he collected at Port Vincent, Livingston Parish, La. Some specimens are grayish, others are brownish (jasperized).

MAINE: Dr. L. W. Carpenter, Limerick, Me.. has sent R & M a large but handsome specimen, weighing 7 lbs., that consist of brown vesuvianite, reddish garnet (grossularite), greenish diopside (pyroxene), and white scheelite which of course is fluorescent. The locality is Berry's Ledge, near Cornish, York Co., Me. An article on the locality has also been sent in by Dr. Carpenter which may appear in this issue if room can be found for it (or else held over for the next issue). A letter from Dr. Carpenter dated February 3, 1951, reads in part:

"As far as I know, scheelite was never reported from this area before. I do not know if there have been such occurrences in any other part of Maine. The specimen sent you was found by my son and myself last summer while digging out vesuvianite and grossularite (variety essonite). We found several dozen good scheelite specimens during the summer in a rock mass four to six cubic feet. From this area, three specimens, besides yours, were given to friends who were and are avid readers of ROCKS AND MINERALS. We have the remainder and are eagerly awaiting spring."

William P. Hinckley, RFD 3, South Brewer, Me., sent R & M a number of specimens which he collected at the old Cape Rozier mine at Harborside, Hancock Co., Me. A letter from him dated February 16, 1951, reads:

"A visit to Mr. Stanley Perham's store at West Paris, Maine, on last Labor Day followed by visits to mines in Paris and Albany, awakened a feverish interest in mineralogy in our family. We soon became acquainted with ROCKS AND MINERALS through our subscription and numerous back issues obtained. We were much surprised to find our home town of Blue Hill mentioned in the second issue of our subscription under "World News on Mineral Occurrences." Though we had found many articles on the pegmatites of western Maine in magazines, we had seen no previous reference to the old mines of eastern Maine.

"Actually the Blue Hill Mine is only one of many in Blue Hill, and there are many more in nearby towns. Most were silver or copper mines, but some were operated for lead, zinc, manganese and molybdenum. Most of them were operated for only a few years around 1880, but a few were again worked in the early 1900's.

"We are sending a box of sample "rocks" from the Cape Rozier Mine. The sheets of pyrite crystals occur quite common and may be found up to at least one-half inch size. Azurite and malachite are apparently a product of alteration and are not plentiful."

The specimens received were most interesting. Among them were azurite (tiny blue balls with greenish malachite stains on rock); chalcopyrite (massive with crystalline dark brown sphalerite); hydrozincite (white incrustations on rock and fluoresces blue); pyrite (small lustrous cubes on grayish rock and forms handsome specimens); serpentine (greenish masses); and talc (small white fibrous masses with pyrite). Another surprising mineral which was detected by its fluorescence was calcite that formed a thin background crust for the pyrite; the calcite fluoresces a deep red under short wave U. V. lamp. Every one of the four pyrite-bearing specimens received had a

thin crust of grayish calcite (on the grayish rock) in which were imbedded the pyrite cubes.

This mine has been briefly described by William H. Emmons, in U. S. Geol. Survey Bull. 432 (1910), Some Ore Deposits in Maine. On page 38 appears the following:

"The Cape Rozier mine is at Harborside, across the harbor from Castine. The country rock is schistose pyroclastic tuff of the Castine formation. This is cut by diorite, which shows no schistosity. On the dump are fragments of the Castine formation cut by thin sheets of pyrite and chalcopyrite and stained with green copper carbonate. The two shafts are inaccessible. Some ore on the dump of upper shaft is composed of calcite, zinc blende, pyrite, and chalcopyrite. The ore observed shows no schistosity."

MARYLAND: From Jack Kepper, 5100 Belle Ave., Baltimore 7, Md., comes the following item:

"Here are a few new mineralogical discoveries from Maryland for your "World News on Mineral Occurrences" section. Both of these discoveries were found in the mineral collection of the Maryland Natural History Society by Mr. Harold Levy, Mr. John Glazer, the writer, and a short wave ultra violet unit.

"The first discovery was a brilliant green fluorescence on orthoclase from the Orange Grove Station in the Patapsco State Park. I examined the material with an alpha counter which confirmed our conclusion that it was autunite.

"The pink and orange calcite from the New London copper mine, the Mountain View lead mine, and the Liberty copper mine were found to fluoresce a brilliant red. The fluorescence is as good if not better than the Franklin, N. J.. calcite."

MASSACHUSETTS: Very fine crystals of datolite, pale greenish and translucent, have been found in the basalt quarries on Mt. Tom, Holyoke, Hampden Co., *Mass.*

MICHIGAN: Harvey Franz, 1027 Ogden Avenue, Benton Harbor, Mich., has sent R & M two very interesting "Turtle stones" which he collected on the beach of Lake Michigan, near South Haven, Van Buren Co., Mich. Turtle stones are Septarian nodules (also called mud cracks) and the ones sent in by Mr. Franz are dark brown in color whose cracks are filled with white calcite—the colors and design do resemble a turtle shell.

MINNESOTA: H. E. Jackson, RR 1 Box 431, Cloquet, Minn., reports the finding of chlorastrolite in a railroad gravel pit northwest of Carlton, Carlton Co., Minn.

MISSISSIPPI: At the mouth of Bear Creek in Tishomingo Co., Miss., about 10 miles southeast of the Tennessee River, chert is found in huge outcrops 250 feet thick. The chert is grayish in color and some nice specimens can be collected.

MISSOURI: T. A. Patterson, RR 1, Granby, Mo., has sent R & M a very nice specimen of white tripoli from the famous tripoli mines at Seneca. Mo. Also a grayish oolitic limestone from Granby. Both Seneca and Granby are in Newton County of southwestern Missouri.

MONTANA: Very good moss agate has been found near Terry, Prairie Co., Mont.

NEBRASKA: Barite, as small yellowish crystals, is found in clay beds exposed about 4 miles southwest of Odell, Gage Co., Nebr.

NEVADA: Nice crystals of amethyst have been found in the Bullfrog District, Nye Co., Nev.

NEW HAMPSHIRE: Greenish-brown xline masses of idocrase (vesuvianite) have been found in an old limestone quarry at Amherst, Hillsborough Co., N. H.

NEW JERSEY: Edward J. Marcin, 103-14 97th Avenue, Ozone Park, L. I., N. Y., contributes the following bit of interesting information and also some specimens. His letter of January 9, 1951, reads as follows:

"I am writing to inform you of an occurrence of a comparatively rare mineral at a famous old locality. The locality is at Snake Hill, also known as Laurel Hill, (in Hudson Co.), New Jersey. At present there is an excavation across the southern part of the hill where the State of New Jersey intends to run a super highway. Unfortunately the excavation is not cutting across the famous portion of the hill, where the excellent natrolites and other zeolites were found. However several collectors from the Queens Mineral Society, Mr. Stadler and Mr. Segeler, to mention two, have visited the area recently. These gentlemen found some interesting specimens of the zeolite, apophyllite, strung on slender glassy filaments of an unidentified mineral. I believe this type material is mentioned in a booklet formerly published by the New York Club entitled "Sequences of Minerals of Newark Igneous Rocks", by W. Gould Levison. Minor amounts of calcite, prehnite and tabular apophyllite were also found.

"I made a trip to this locality about 3 months ago and found one of the rarer zeolites, gmelinite, in fair quantity, in good but tiny crystals, associated with apophyllite. While on this trip I also found the rarer mineral, "Erythrite." I do not believe this mineral has ever been reported from this locality. The occurrence was found on only one large segment of a boulder. I am sending you a piece of this material so that you may verify my identification to your own satisfaction."

Two specimens were received each showing the characteristic peach-red color as an incrustation on diabase, the rock of the locality. According to ROCKS AND MINERALS records, this is the first occurrence of erythrite in New Jersey.

NEW MEXICO: A nice specimen of pale green fluorite from the Hayner Mine, in the Organ Mts. near Las Cruces, Dona Ana Co., N. Mex., was sent R & M by Don Alfredo, 322 Linda Vista, Las Cruces, N. Mex.

NEW YORK: We once heard of an old "gold mine" near Rhinebeck, Dutchess Co., N. Y., which was said to contain quartz crystals. The following letter received from Wallace Knapp, 60 South Street, Rhinebeck, N. Y., is of more than passing interest:

"I visited your friend, Carl Klein in Hudson, N. Y., and learned from him of your interest in the location of the Rhinebeck "gold mine" from which quartz crystals have been taken. I know the location of the mine and already have taken quite a number of splendid crystals up to 3 inches in length. It would be hard to write a description how to reach it, since it is in the middle of the woods, with no immediate landmarks. Also, since it has been abandoned for over 50 years it is not locally known. However if you ever wish to visit this mine, I will be glad to take you to it.

"I enjoy R & M very much and though I am just beginning as a collector, I think I have a fairly good collection for a 15 year old boy. My collection numbers about 1500 and I am making a specialty of quartz in all varieties."

In the Jan-Feb., 1950, issue of R & M appeared an item (p. 43) sent in by William F. Whalen, 598 E. 138th St., New York 54, N. Y.. relative to an extensive rock dump in New York City (near Bowery Bay, Astoria, Queens). Now we hear from Mr. Whalen that the locality is no more—dirt fill has been added to the dump completely covering the rocks so that it is no longer a source for minerals. It's a sad, sad story!!

NORTH CAROLINA: Nice staurolite xls (singles and twins) occur near Murphy, Cherokee Co., N. C.

NORTH DAKOTA: When the Editor of R & M with the Hamiltons of Vandergrift, Penn., went on a 10-day trip touring Ohio, Indiana, and Kentucky, the first night, Saturday, October 7, 1950, was spent with Mr. and Mrs. Fred R. Klink, 1440 Bryan Avenue S. W., Canton 6, Ohio. Here we had a most pleasant evening, talking minerals far into the night, and also inspecting his collection which was not too large but a very fine one. He gave us each a number

of nice minerals, one was petrified wood that came from the White Cedar Canyon in Roosevelt Forest, Billings Co., N. D. The specimen was petrified cedar, dark brown in color and rather friable and contained some very thin veins of bluish chalcedony.

OHIO: The last night of our trip through Ohio, Friday, October 13, 1950, was spent in New Concord and here we visited the home of Mr. Robert Mitchell who is an instructor in geology at Muskingum College in the little city. Unfortunately Mr. Mitchell had no collection for us to examine but we did have a most pleasant evening talking minerals and geology and inspecting a very handsome specimen of dark brown petrified wood which he collected in the adjacent Guernsey County just 0.6 mile east of New Concord. The locality is a brook bed 300 feet north of U. S. Highway 22 and 40 and ½ mile east of the Muskingum-Guernsey County line. As we were leaving, Mr. Mitchell surprised the Editor completely by donating the specimen to him. This fine specimen is 4 x 6 inches in size and weighs exactly 3 lbs.

OKLAHOMA: Nice smoky quartz crystals have been found in the Wichita Mountain, of Greer Co., Okla.

OREGON: A new find of opal and this time precious fire opal which appears to be the first found in Oregon, is reported in the February, 1951, issue of THE MINERALOGIST, (p. 84) (Dr. H. C. Dake, Editor, 329 S. E. 32nd Avenue, Portland 15, Ore.) The new material was discovered recently on the Warm Spring Indian Reservation in Central Oregon, by U. S. Forest Ranger A. C. Acteson. The opal is found in a matrix of opaque, pale blue common opal, and shows large harlequin patches of green and red fire. well suited for gem cutting.

PENNSYLVANIA: M. V. Brubaker, Rt. No. 2, New Holland, Penn., lives in the famous Lancaster County of his state where chromite, rutile and serpentine abound and many other minerals as well. In the southeastern part of the county, in the Christiana-Atglen area, he collected some nice rutile crystals last summer, two of which he donated to R & M. Both are dark brown in color, each one inch long and loose, and one shows twinning. In the neighboring Lebanon County, at Cornwall, where the famous iron mine is located that is operated by the Bethlehem Ore Co., he collected some tarnished chalcopyrite, very nice xled magnetite, and equally nice dark brownish-olive garnet (andradite) 1½ inch loose crystal, and some loose lustrous pyrite crystals, all very nice.

RHODE ISLAND: Amphibole asbestos, grayish-green in color, have been found in fibrous masses more than 6 inches in length, at the Manton Ave., quarry in Providence, Providence Co., R. I.

SOUTH CAROLINA: Skemmatite, a hydrous oxide of manganese and iron, occurs in black masses near Iva, Anderson Co., S. C.

SOUTH DAKOTA: A number of minerals from South Dakota have been sent in by Felix C. Scanlon, 13 E. St. Joseph St., Rapid City, S. D. Among the specimens were columbite (black crystal masses) and wolframite (black mass), both from the Get-In-and-Dig-Mine; garnet, loose crystals from shale near Silver City; 2 reddish jasper pebbles from Reservoir Hill near Rapid City; and spodumene (2 inch grayish crystal) all from Pennington County. From Custer County he sent some nice loose colorless selenite (gypsum) crystals, 2½ inches long, from Hermosa; a nice book of muscovite from near Custer and a large crystal section of black tourmaline also from near Custer. From Lawrence County was received a nice black specular hematite from a ridge in Box Elder Valley near Nemo; and a 2 x 3 specimen of black chlorite schist containing stringers of auriferous pyrite that came from the famous Homestake mine at Lead (the auriferous pyrite ran 4/10 oz. of gold per ton).

A letter from Mr. Scanlon, who is

a student at the South Dakota School of Mines in Rapid City, reads partly as follows:

"It's really surprising how much collecting can be done here. They say that the only element not found in the Black Hills is platinum, so you can see the wide variety of minerals to be found in South Dakota."

TENNESSEE: Nice specimens of actinolite (variety of amphibole) have been found as dark green acicular crystals in a matrix of chlorite and quartz at the famous copper mines at Ducktown in Polk Co., Tenn.

TEXAS: Turquoise has been mined for many years on a small scale at a locality about 6 miles west of Van Horn near the Culbertson-Hudspeth County line, in Texas. If any reader is familiar with the locality, we would appreciate a few notes about it.

UTAH: Dr. A. L. Inglesby of Torrey, Utah. has sent R & M an assortment of the most beautiful reddish agates imaginable. They come in all sizes, some as rounded nodules others as sawed slabs, some slabs partly polished, etc. The slabs, whether rough or polished, are extremely beautiful and each one is different. The slabs range all the way from 2 x 2 up to 4 x 4 and 3 x 7 and all very fine gem quality. A very nice 3-inch geode (complete with two halves) whose interior was lined with small brownish-red calcite crystals) was also included with the agates. All the lovely agates and the geode come from the foothills of the Henry Mountains in Wayne County, Utah. Dr. Inglesby discovered the locality and has the property posted.

VERMONT: In the Nov-Dec., 1950, issue of R & M appeared a short item on page 603 about one of the oldest iron mines in Vermont, at Forestdale. Fred J. Tupper of Franklin, Vt., contributes the following about another old mine in the State. In his letter of December 30, 1950, he writes:

"I was interested to note in the Nov.-Dec. issue of R & M on page 603 the paragraph on the Forestdale iron mine. We have one in Sheldon (in Franklin Co.) somewhat older.

"The shaft is now filled with water and most of the waste material has been hauled away for road fill, however. there is a prospect hole directly across the highway where good specimens of hematite are found, which, when dry-brushed make attractive material due to the high metallic luster. If you have the Enosburg Falls quadrangle start at the Canadian Border 72° 55' and follow the meridian south to a point where it crosses the 3rd road south of the Missisquoi River. At this point you will note a house very close to the line east. The mine is located on this highway just left of the line."

Along with his letter Mr. Tupper sent in a short item taken from the County Gazetteer and Directory of Franklin County—1882-1883. It is as follows:

"Iron ore in considerable quantities exists in the town. As early as 1798, a furnace for smelting the ore was built here, by Irrael and Alfred Keith, who came here for that purpose from Pittsford, Vt. It was located on the east side of Black Creek, where it was operated until 1822 or 23, and then rebuilt on the opposite side of the stream. Here it was kept in operation for a number of years, but finally abandoned. And as this was one of the first furnaces erected in the State, the demand for this ware became quite active, as at that time one chief industry throughout the country was the manufacture of potash. Men came to Sheldon sometimes, from a distance of two hundred miles, for these kittles."

VIRGINIA: Native copper occurs in the copper mines of Virgilina, Halifax Co., Va.

WASHINGTON: Nice agate pebbles have been found on the beach at Moclips, Grays Harbor Co., Wash.

WEST VIRGINIA: Chert occurs as small white masses or nodules in limestone at Greenland Gap, Grant Co., W. Va.

WISCONSIN: Pale brownish loose crystals of calcite, with edges all rounded, have been found in a highway cut 2 miles west of Coon Valley, Vernon Co., Wisc., by Miss Alta Beebe of Coon Valley.

WYOMING: Very fine specimens fossil fish are found in the Green River formation near Carter, Uinta Co., Wyo.

ALASKA: Platy masses of stibnite associated with massive milky quartz are found on Eagle Creek on Douglas Island (about 2 miles northwest of Juneau), Alaska.

ALGERIA: Small gray crystals of willemite which fluoresce green under the Mineralight, are found at Bon Thaleb, Algeria.

AUSTRALIA: The following letter, dated January 4, 1951, has been received from H. H. Batchelor, c/o P. O., Hughenden, No. Queensland, Australia.

"Beyond record floods, there is little news from here. There is only one opal mine working at present in Queensland, this is a hill situated near Quilpie. It is a mesa of desert sandstone and has been worked on and off for more than 25 years. The opal is boulder, an almost black matrix, but the colors of the opal are very vivid but painted on very thin.

"For more than a year now it has rained almost every week and Lake Eyre in Central Australia, once a salt pan 40 feet below sea level, is now an inland sea covering some 5,000 sq. miles. No white man or black man now living has seen so much water in the deserts. It was one of the wettest seasons on record. The Diamantina River was 100 miles wide, luckily through uninhabited country.

"Nearly all miners are now after tin, tungsten and gold, hardly anyone troubling about gems.

"As soon as the weather takes up, I will have another try to locate the cornflower-blue tektites. During the past 40 years I have only seen three small fragments of this rare meteoric stone. No one can agree as to the origin of these stones in my advertisement (see page 196 this issue). Opinions vary widely—from jasper to slag. I never heard of dark blue jasper before."

BRAZIL: A very nice loose one inch crystal of precious topaz (golden color) from Theofoli Ottoni, Minas Geraes, Brazil, was donated to R & M by R. L. Sylvester, 154 Parkside Ave., Syracuse 7, N. Y. The crystal was collected in November, 1950, by his son, Raymond A. Sylvester, who is stationed in Rio de Janeiro, Brazil, as a pilot for the Pan-American Air Lines.

BRITISH HONDURAS: THE CATHOLIC NEWS in its issue of March 11, 1950, had a little item relative to the finding of a 37-pound agate in British Honduras. The specimen was acquired by the Rev. Bernard C. Zimmerman, S. J., of El Cayo, British Honduras, who brought it with him when he visited his brother, Peter J. Zimmerman, in Cleveland, Ohio. Father Zimmerman planned to have it cut into a large sphere so that it could be presented to the Holy Father as a Holy Year gift.

In the February, 1951, issue of the MINERALOGIST (Dr. H. C. Dake, Editor, 329 S. E. 32nd Avenue, Portland 15, Ore.) appears an item on page 67 relative to the same specimen and it is correctly identified as a jasper, and a very colorful one, too. The jasper, which in its original state was a nearly spherical mass, 10 inches in diameter, is now a magnificent polished sphere, 7½ inches in diameter. It had been sent to the gem cutters at Idar-Oberstein, Germany, where it was fashioned into a sphere and polished, as no domestic cutter would undertake the job. This 7½ inch sphere is said to weigh 22 pounds.

CANADA: Raleigh A. Bishop, 28 Woodcut Lane, Manhasset, N. Y., sends in the following item:

"A year ago (1950) I rambled through Nova Scotia (in Canada) and picked up enough minerals as to cramp our travelling facilities. And agates and jaspers! I found one stretch of road at Scott's Bay where they were shovelled in the road as fill."

CHILE: Nice massive specimens of bornite come from Collahuasi, Tarapaca, Chile.

CUBA: Native gold occurs in the gold mines at Holguin, Oriente Province, Cuba.

DENMARK: Howard V. Hamilton, 187A Franklin Ave., Vandergrift, Penn., sends in an item from CHEMICAL ABSTRACT (November 25, 1950).

"A find of Brushite in a Danish Medieval tomb at Soro and the Formation of brushite from bone phosphate," by Askel Tovborg-Jensen. MIDD. DANSK. GEOL. FOREN.

Crystals found on skeleton fragments were identified as brushite, $CaHPO_4 .2H_2O$, it was concluded that brushite was probably formed by the action of dilute strong acids on bone phosphate.

DOMINICAN REPUBLIC: Nice crystals of almandite garnet in mica schist occur at Punta Balandra, Samana Province, Dominican Republic.

EGYPT: Coarse xline lustrous masses of galena occur at Quoessir, Eastern Desert, Egypt.

ENGLAND: Nice specimens of xled amethyst have been found near Redruth, Cornwall, England.

FINLAND: Dark grayish masses of auralite associated with iolite in quartz, occurs at Abo, Finland. Auralite is altered iolite.

FRANCE: Nice crystals of brownish staurolite in mica schist occur at Quimper, in Brittany, France.

GERMANY: Nice specimens of aborescent native silver have been found at Altwolfach, Baden, Germany.

GREECE: Pinkish, brecciated marble of much beauty, is quarried on the island of Skyros, Greece. A large amount of this marble is shipped to America for interior decoration.

HAWAII: Tiny colorless cubic crystals of chabazite on dark brown drusy quartz, were found during an excavation for the air base near Hickam Field, south of Honolulu, Hawaii.

HAITI: Large deposits of low grade copper ore occur around Terre Neuve, about 10 miles from the seaport of Gonaives, in Haiti. The chief ore is chalcopyrite which is found in small pockets and masses in a garnet rock.

IRELAND: Nice specimens of xled and massive native copper have been found at Cronbane, in Wicklow, Ireland.

ITALY: Very fine specimens of xled lustrous galena often associated with chalcopyrite crystals, occur in the zinc mines at Bottino in Tuscany, Italy.

JAPAN: Prof. K. Omori, Tohoku University Sendai, Japan, has sent R & M a most interesting specimen of garnet that was found in pegmatite in Ishikawa, Fukushima Prefecture, Honshu Island, Japan. The specimen consists of large dark brown crystals of garnet (almandite-spessartite) with some massive smoky quartz. The specimen is a large one, 6 x 6 x 8 inches in size and weighs 14 lbs. 2 ozs.

The pegmatite deposits of Ishikawa are noted for many minerals among which are andalusite, beryl, columbite, ishikawaite (a tantalo-niobate of uranium with ferrous earth, etc; somewhat like samarskite), kikukwaseki, orthoclase, quartz, tourmaline, etc.

KENYA: A nice lustrous foliated mass of graphite associated with massive smoky quartz and coming from Tsaro, Kenya, Africa, was donated to R & M recently by John S. Albanese, Box 536, Newark 1, N. J.

KOREA: Very fine flesh-colored Baveno twins of orthoclase, and often associated with smoky quartz crystals, have been found at Bunkeimen, Korea.

MEXICO: Nice masses of native copper are found in the copper mines of Guanacevi, Durango, Mexico.

NORWAY: Fine specimens of molybdenite, as crystals, masses and plates, associated with smoky quartz, feldspar, or in gneiss, have come from Brevik, Telemark Province, Norway.

PANAMA: Petrified wood, limb sections of grayish chalcedony, have been found near Blue Mountain. (Cerro Azul) in Panama Province, Panama, by Burton E. Davis, Box 1181, Critobal, Canal Zone. A small but nice specimen was donated to R & M by Mr. Davis.

PERU: Nice specimens of xled enargite, black in color, come from the famous copper mines of Cerro de Pasco, Peru.

PHILIPPINE ISLANDS: From Minerals Unlimited, 1724 University Avenue, Berkeley 3, Calif., was obtained a nice specimen showing tiny grains of native gold. with pyrite, in greenish andesite. The specimens comes from the gold mines at Antamok (7 miles from Baguio), Luzon Island, Philippines.

PUERTO RICO: Commander John Sinkankas, formerly of Norfolk, Va., but by now may be stationed in Washington, D. C., sent R & M a small but nice specimen of grayish-brown coral limestone which comes from Vieques Island (off east coast of Puerto Rico). A note from Commander Sinkankas reads:

"The coral limestone is typical of the old coral reefs along the Caribbean, especially along the south coasts of Cuba-Haiti-Puerto Rico-Virgin Islands, etc. These coasts all appear to have been uplifted about 20 feet and the corals deposited along the shelves exposed clearly to view. The specimen sent you was picked up by a friend from the southeastern tip of the Island."

SCOTLAND: Jas. W. McKay, 5 St. Ann's Terrace, Banff, Scotland, has sent R & M a number of minerals among which were some very nice compact greenish serpentine pebbles from Portsoy, Banffshire, Scotland. The specimens of serpentine ranged from 1 x 1 up to 3 x 3½ inches in size. One beautiful specimen had a polished face in which the green color was mottled with white and red. A letter from Mr. McKay, dated December 21, 1950, gives the following information on the serpentine:

"The serpentine marble at Portsoy is a rock outcropping on the seashore and was quarried for years, but is not worked now. To quote my book of references:—'Six veins of serpentine occur in the diorite, two are of important size west of the Battery. The largest vein is at the "marble quarry" and shows a gradual passage from diallage rock or gabbro into serpentine. The joints coated with steatite and thin veins of chrysolite add beauty to the rock. Asbestos and enstatite have also been found here. The serpentine is the famous Portsoy marble from which Louis XIV had chimney pieces made for the Palace of Versailles.'

"I picked the serpentine pebbles off the beach as being a handy size but could easily obtain proper pieces of the rock if anyone is interested.

"If any readers of R & M plan to tour this country, I would be glad to meet them and help as far as I can in obtaining mineral specimens. The North of Scotland is noted for minerals and many good specimens can be collected."

SPAIN: Buff, nodular masses of menilite, a variety of opal, occur at Caldas de Malavella, Gerona Province, Spain. There are thermal springs in the area which are known from the days of the Romans.

SWEDEN: Very fine crystals of magnetite, imbedded in chlorite schist, have been found in the noted copper mines at Falun in Dalecarlia, Sweden.

SWITZERLAND: Beautiful rock crystals have been found at Amsteg, Canton of Uri, Switzerland. A loose crystal estimated to be 7 inches in length and enclosing actinolite, was seen at the Philadelphia Academy of Sciences in Philadelphia, Penn.

TRINIDAD: Commander John Sinkankas (see item on Puerto Rico) sent

R & M a nice little specimen of brownish colored calcite which fluoresces pale green under the Mineralight. The locality is the island of Trinidad. A letter from him dated February 10, 1951, gives the following information on the mineral:

"The brown calcite is common in a dense blue limestone occurring on the extreme western tip of Trinidad and probably extending eastward to form the low mountain range of Trinidad's north coast. The limestone is apparently easily attacked by the heavy rainfall of that climate and pockets and cavities are common —all lined with the brownish calcite. Along the cliffs, wave action has eroded a number of caves into the rock. I had only a day's stay there so unfortunately cannot tell you more about the place although I believe there are rocks other than limestone in the immediate vicinity."

UGANDA: John S. Albanese, P. O. Box 536, Newark 1, N. J., donated some nice loose crystals to R & M. One was a brownish modified pyritohedron (limonite pseudo after pyrite) and came from Byegereko, Kigezi, Uganda. The others were a number of water-worn crystals of magnetite, each about ½ inch in diameter, that came from Kasenyi Hill, Kigezi, Uganda.

VENZUELA: Cinnabar has been mined on a small scale at San Jacinto in the State of Lara, Venezuela.

WALES: A letter dated December 18, 1950, from W. E. Howarth, National Museum of Wales, Cardiff, Wales, contains the following interesting information:

"We have some curious beach finds submitted to the Museum as a result of the coal export trade. During the last hundred years there have been periods of depression when there was a market for the coal but no return cargo, so that the ships were compelled to make the return journey in ballast. This ballast was usually obtained from the nearest pebble beach and on reaching the Bristol Channel, the ballast was jettisoned before docking. As a result many rather disconcerting finds are made which are very misleading when the limits and movements of the ice during the Pleistocene are being studied; as we have found many Cornish, French and Scandinavian rocks in addition to those whose provenance could not be determined. Cement from wrecked ships can provide puzzles which are not now such facers as they were when we were newcomers to the district. We have had pebbles of paint, of wax (submitted as ambergris by an optimist) and other queer things. The most annoying importation is flint from the south coast of England (also rejected ballast from colliers), as we have a theory that the Jurassic and Cretaceous extended over South and East Wales, and that the present river system of South Wales was initiated on a surface of Mesozoic rocks. The flint pebbles are use less as evidence because of the contamination by 'foreign' importation."

Magazines Do Good Work!

Editor R & M:

It was with great interest that I read of the successful formation of the new Eastern Federation in the Nov-Dec., 1950, issue of ROCKS AND MINERALS.

We are all very appreciative of your efforts in behalf of this movement in the Eastern States, and for the fine boost you have given it. I am sure that the organizers appreciate your splendid help also.

The Regional and National Federation of the Societies throughout the United States, wherein people from different parts of the country can get together and compare notes, and get better acquainted with each other, and other parts of the country, has proven to be a grand thing. After your Federation has had a few Conventions with many clubs represented they will come to realize this more and more as time goes on.

We would sure miss our Federation activities, and the impetus which it has given to the entire Mineral Club movement. It also lends a certain dignity and prestige of which we are all very grateful, which helps to stabilize the continuity of the Clubs themselves.

Of one thing we are sure, however, and that is that we would all be sunk, were it not for the good work of the magazines.

Ben H. Wilson
Joliet, Ill.

December 14, 1950

RE-EXAMINATION OF AN OLD MAINE LOCALITY

By L. W. CARPENTER, M.D.
Limerick, Maine

Preliminary to this subject, I want to mention that I have before me the Geological Survey made by C. H. Hitchcock, published by the State of Maine in 1861, in which it is stated by him that the list of minerals in the areas mentioned were taken from a Mr. Houghton's work, who also helped in the survey. He also stated that he was indebted to Dr. Cleveland's catalogue and to Dr. Jackson's Reports of some twenty years before.

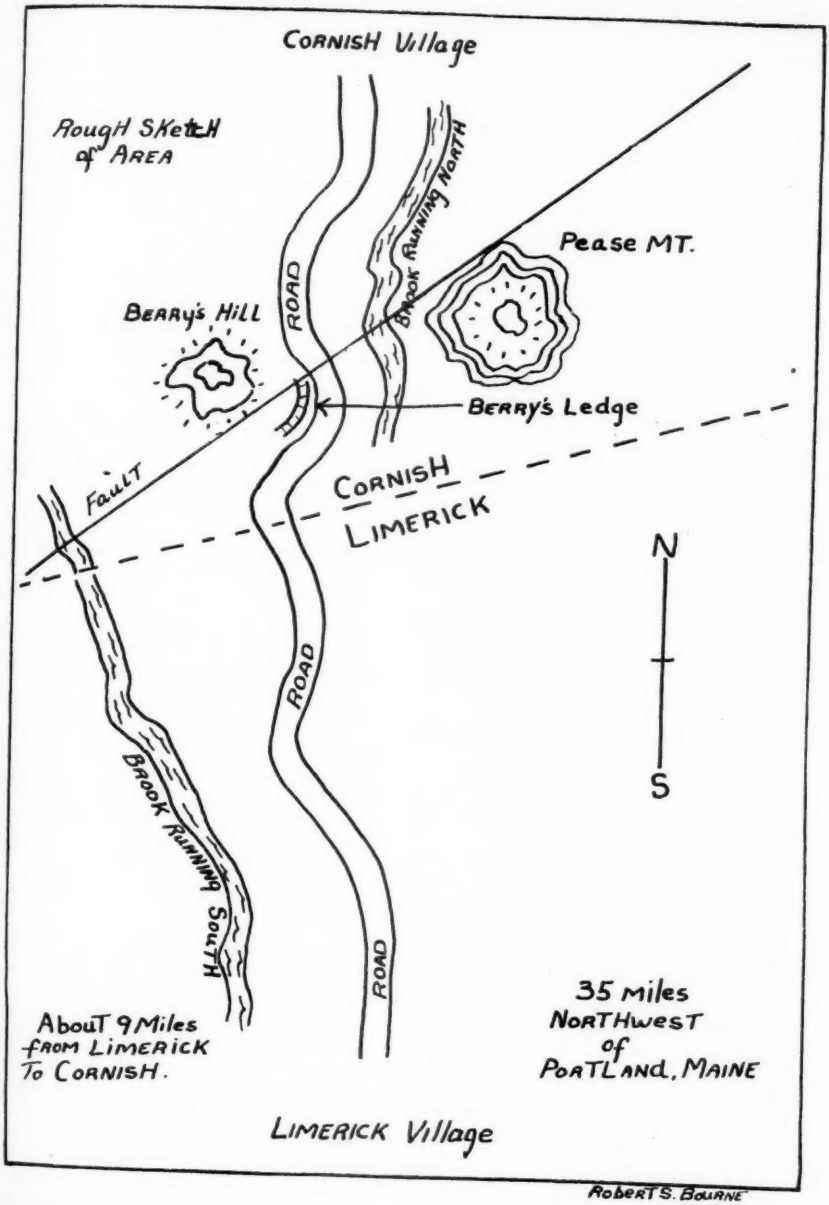
Since I wish to confine this subject to a specific area I am not going deeply into the minerals of Maine as a subject. Hitchcock mentioned but one mineral in Limerick, black tourmaline, and none in Cornish, in which has since become known locally, at least, as the Limerick-Cornish Vesuvianite Area.

Some twenty-two or three years ago Route No. 5 was built, and closely followed in part the old town road from Limerick to Cornish. The necessary blasting of the high side of a fault which crossed the road exposed vesuvianite and grossularite the presence of which few people had suspected. The old dirt road had skirted the cliff and being narrow there was a dense growth of intervening bushes. Still it is difficult to explain how the vesuvianite could have been overlooked for so long a period. Only last summer in 1950 with help of Mrs. Carpenter and my son, Forrest, I found points and lines of metamorphic contact over an area of more than eight by five miles in diameter. How much further it could be traced I do not know, but we believe it to be a part of the pegmatite belt that extends from the Oxford County, Maine, belt southeast through north York County, Maine, and diagonally through Cumberland County finally reaching the ocean near Phippsburg in Sagadahoc County, Maine.

This Limerick-Cornish area has been ably discussed in recent years by the late Herbert Haven, B. S., and Mr. Leonard Starbird in the Maine Mineralogical and Geological Society meetings. There have also been talks given at these meetings by the late Dr. John Pepper, Messrs. Willis True, Benjamin Burbank and others. The little prospecting done here, however, seems to have been nearly all done within the last fifteen years. The point of most vulnerable attack, to date, seems to be at what is locally known as Berry's Ledge. It may or may not be the best. The specimens taken from this locality are excellent. However, we are looking for fruitful results elsewhere in this area.

A brief recapitulation of what has taken place here seems desirable both from the amateur and professional mineralogist's and geologist's view point. We are assuming that the areas on our continent once covered by the pre-Cambrian seas and their deposits is a matter usually well understood by advanced students of the subject. Also the subsequent granitic intrusion and extrusion with resulting metamorphoses cannot fail to have alerted all mineralogy students to the possible and probable "finds" at points of metamorphic contact. The pre-Cambrian seas and pegmatitic extrusions and intrusions took place, according to some excellent authorities, possibly two billion years ago. The area covered by this subject was, of course, subjected to both the above mentioned geological occurrences.

This brings us to the pith of the subject, a fault most easily visible from the most vulnerable point, from the mineralogist's view, "Berry's Ledge," so-called locally. It cuts the north and south Limerick-Cornish road at this point (The Ledge) in what has proved to be the best locality hereabouts for obtaining good specimens of silicates. The angle of fault and road intersection is about 30 to 35 degrees. The fault in itself is of great interest from a speculative angle. Pease Mountain lies to the northeast and has its northwest shoulder cut off by the fault. It comes straight towards Berry's Hill and slices off a sizable portion of that. This is the area in mind in the



Rough sketch map (not to scale) of the Limerick-Cornish vesuvianite-grossularite — scheelite area in northern York County, Maine.

subject of this article. The road was built overlaying the fault at the aforementioned angle. See diagram.

Speculation as to the cause of the fault is not necessary to the understanding of it, but it is nevertheless intriguing, and my theory for what it is worth follows. It would seem from the evidence that the pre-Cambrian limestone was dissolved in many places by mineralizing agents. This might have gone on for millions of years with the result of cave formation beneath the surface. (There is evidence of some at a few points now.) Then when the "long cold spell" as we say in Maine, came with its two mile thick ice sheet, some twenty to thirty thousand years ago, its bulldozing glaciers, and final melting with softening of the soil, millions of tons of rock, sand and gravel unloaded on a weakened under-structure, caused a collapse or fault. Road fill from this glacial till has been taken from what was once crop land in numerous areas hereabout, and, as we know, much of southwestern Maine is of this character. It is also well known that it was upon the areas of glacial till of northeastern United States and southern Canada, that our best white pine forests grow.

At Pease Mountain the high side of the fault is to the northeast, while on Berry's Hill the high side is to the southwest. The road runs between these elevations, and there is a brook five miles long which runs north and through Cornish Village and flows into the Great Ossipee River a short distance above the Ossipee confluence with the Saco. On the opposite side of the road less than half a mile away is another longer brook flowing south into the Little Ossipee which not far away enters the Saco. It would seem that the low side of the fault dropped toward the east and north while the high side on the southwest of the road did not change, and hence the brook on that side flowed south as it had at least since the last ice age.

These brooks, flowing in opposite directions, would seem to depend on two geological occurrences, ages apart, viz. the granitic intrusion and extrusion and the fault which probably occurred during or near the end of the ice age. This last supposition is based upon the fact that weathering of the fault rim has not been marked. Weathering is severe only in the soft old limestone. Vesuvianite is found in spots over the entire exposed area. Crystalline limestone often mixed with massive diopside is common both in bedrock and erratics in this area. Grossularite is found in many places.

At "Berry's Ledge," five miles north of Limerick, there may be found the following minerals. (There is no quarry or dump. It means heavy hammer, crowbar and drills, together with much enthusiasm for the work.)

QUARTZ.

FELDSPAR. Varieties, andesine, anorthite and albite that is occasionally translucent. Feldspar crystals, andesine and probably anorthite.

WOLLASTONITE.

GROSSULARITE, reddish to dark brown, often in quartz and frequently associated with vesuvianite. It is frequently crystallized and sometimes massive.

CHLORITE. green to iridescent black.

CALCITE. largely massive; crystals in occasional pockets.

DIOPSIDE. both crystals and massive varieties of a green color.

PECTOLITE.

SCHEELITE. White, massive, fluoresces blue, and associated with vesuvianite, grossularite, and diopside.

SCAPOLITE.

VESUVIANITE. radial brown aggregations of rare symmetry.

As one might infer from my remarks at top of this list this is no job for one who dislikes manual labor and I might add that most of our finds which we will be glad to show to anyone interested, have been hammered from the rock for one hundred yards along the highway.

The land adjoining this portion of the highway is private property. The owners have both kindly given me permission to prospect for minerals on this land. I would advise that others show them the courtesy of asking. Mr. Day is road

(*Continued on Page 187*)

THE AMATEUR LAPIDARY

Conducted by COMMANDER JOHN SINKANKAS

Amateur and professional lapidaries are cordially invited to submit contributions and so make this department of interest to all.

Tempus Fugit. In 1931 the ROCKS AND MINERALS started a cutting and polishing movement in the United States, and ran a regular column entitled "The Amateur Lapidary." A pamphlet entitled "The Working of Semi-Precious Stones" was also published at the same time. In view of the ardent interest presently displayed in the lapidary art, this column is being revived and will be continued for the benefit of our readers.

We know that many of our readers do not subscribe to earth science magazines other than ROCKS AND MINERALS. Rather than force subscribers whose primary interest is in the cutting and polishing of gemstones to take several magazines, this column will feature items and articles of interest in each issue concerning the lapidary art. Your interest and appreciation will be the only limit to the length of this feature.

Contributions will be most carefully considered for publication in this column. Items of special interest from lapidary clubs or lapidary divisions of mineralogical societies will be welcome also and will receive detailed treatment. We will be glad to accept articles on any phase of techniques, localities, the handling of special materials, cab and facet cutting, etc., to name a few. There is much enthusiasm for the pebble polishing art in the West, let's have our Eastern States as adequately represented in this column.

Wet Sanding Hints. There has been quite a flurry lately about the advantages of wet sanding over dry sanding, the usual technique. Contrary to popular impression, wet sanding is not a recent development. Grieger's Encyclopedia and Super-catalog carries an article on wet sanding cloth and its uses on page 52 of their 1950 issue. This article indicates that wet sanding has been carried on for a considerable period of time before the publication of this catalog (copyright 1949). The LAPIDARY JOURNAL of June 1950, carried an initial article on wet sanding by Ted Purkheiser in which the wet sanding technique was described for jade. This was followed in the August, 1950 issue by an article by Herbert L. Monlux on wet sanding, and in the December, 1950 issue by an article on the same subject by R. L. Mitchell. Where the idea of wet sanding started, or when, is not known, but as the above resume will show, it isn't quite a new development.

My first experience with wet sanding was in 1949. The contrast between wet and dry sanding was so preponderantly in favor of the wet discs, that (for me) dry sanding was, and is completely out. For the benefit of our readers we will summarize briefly the salient features of the wet sanding methods to prove that it is the only type of sanding that should be done.

Wet sanding cloth is similar to dry cloth except for several features, the most important being of course, the glue used in bonding the carborundum grit to the cloth. In the dry cloth, the glue is water-soluble and as the cloth is subjected to the heat of sanding the glue gets tacky and the rock dust joins it to form a solid mass whose effects are called "glazing." In a very short time, the cloth is so clogged that cutting is extremely slow. In this condition it may be fine for putting the final touches on a stone previously sanded with new cloth but it is too slow for the actual removal of much material. In any case there is the omnipresent hazard of heat which has the following effects: (a) it can crack the stone, (b) it can loosen the stone on the dop, or (c) it can slow up the whole process of sanding because cooling time is required in order to prevent (a) or (b).

Wet sanding obviates the above since the wet sanding cloth is heavily impregnated with a plastic resin which is al-

most completely unaffected by water. I have tried soaking wet sanding discs in water before stretching on a sanding wheel but without any noticeable increase in pliability, the material is simply too waterproof to yield. This remarkable resistance to water absorption is the most valuable feature of this cloth since, when used in conjunction with a spray of water, the heat generated is carried off by the water as well as the rock dust. A stone cannot become undopped nor can it crack because of heat. Glazing, as invariably happens with dry cloth, does not occur since the plastic cannot melt and combine with rock dust to clog the surface. Waterproof sanding cloth must be regarded as a flexible grinding wheel.

In keeping with the thought that the wet cloth is a flexible grinding wheel, two grades of cloth are used, 220 grit and 400 grit to carry on where the grinding wheels leave off. Several discs of 600 are kept handy also for certain materials such as jade and vesuvianite, which tend to undercut slightly even with 400 grit. In wet sanding, it is emphasized that this is grinding and not partial polishing as is the case with dry sanding. Most texts speak of a "gloss" imparted by sanding dry with a well worn cloth, actually it isn't a gloss at all but a highly imperfect polish attributable to the initiation of a Beilby flow layer. In a glazed sanding cloth, the rock dust trapped in the surface polishes the cabochon while at the same time and depending upon how glazed the cloth is, the carborundum grits continue to plow their minute furrows. High pressure at this point will start the surface molecules flowing into the furrows and may result in the entrapment of air bubbles, rock dust, etc.. in the cabochon surface leaving a cloudy, murky finish which later polishing will never improve except perhaps after an unreasonably long polishing period.

Observe now the wet sanding process. It does not and cannot involve polishing since it is cold and the rock dust which could act as an initiator of the Beilby flow is washed away as fast as it forms. We have true abrasion which involves removal of material only. By varying the size of grit we reduce the surface abrasions to such a fine point that we can then go to the polishing buff confident in the knowledge that no air bubbles, rock dust or impurities have been caught in the surface and that only a short time on the buff is needed to bring out a gleaming polish as near to perfection as possible.

There are several kinks in wet sanding which you may want to know about. The flow of water upon the cloth has a decided effect upon the depth of cut since it acts as a feeble lubricant film. Its effect is to keep the stone away from the cloth so that if a generous flow of water is used, the stone is held off more and a finer cut results. As the flow of water is reduced, a more intimate contact is possible and greater abrasive action takes place. Translating this in terms of shop practice, if you want fast cutting, such as in rounding off a stone just as it comes from the grinding wheel, reduce the flow of water. As the stone becomes smooth, increase the water flow to get a finer cut and a higher gloss. This point is particularly important in the wet sanding of vesuvianite, dumortierite, rhodonite, jade, etc. which tend to undercut unless a very fine cut is taken using considerable water. These gemstones turn out splendidly in wet sanding but take somewhat longer than ordinary materials.

Wet sanding discs will eventually wear out but their wear is so slow that money will be saved by converting to their use exclusively. Experience has shown that they outlast dry discs several times to one and because they do not clog up, reconditioning or changing is not needed nearly so often thus realizing a considerable saving in time. In terms of expensive rough, like precious opal, one stone saved from disastrous overheating will pay for the cost of several of the more expensive wet sanding discs.

As sanding discs wear, particles of grit may begin tearing loose from the surface and rolling about before being flushed off by the water. All such loose

particles must be avoided, they will cause rather deep scratches in an otherwise homogenous surface. Sand on another portion of the disc to avoid the torn sections. In this respect, loose grit deliberately applied could create many such scratches and wear the cloth tremendously. It can be used successfully however when the cloth is on its last legs but then only for initial sanding. The final sanding in any case, should be done on intact cloth.

My wet sanding is done in a horizontal pan type of machine with the spindle vertical and the accessories screwed on the top of the spindle. A pipe for water is led over the middle of the sander so as to drop the flow directly into the center of the whirling disc, centrifugal force does the rest. Naturally the rate of flow is adjustable. The sanders are of the type that have snap-on rims which press the edges of the cloth downward in the locked position. Under the cloth is a pad of ¼ inch sponge rubber, cemented to the aluminum body of the sander. The cloth discs are prepared for mounting by inscribing a circle concentric to the circumference as a guide and then notching along the edge every ¾" or so. This permits the stiff cloth to be bent over the edges and locked into place, an otherwise impossible task to accomplish with neatness. Those who own sanders with a spring lock may find this scheme satisfactory but will probably need to shorten the spring to make it strong enough to seize the stiff cloth adequately. If this does not do, then cord should be used in place of the spring. Snap the spring in place to hold the cloth, run several turns of cord, remove the spring and adjust the cloth, then wrap on more cord bearing down to a good degree of tightness.

A firm grip on the cloth is necessary since the sander must be run at fairly high RPM in order to realize maximum efficiency. For a seven inch sander I use about 1000 to 1200 RPM. Faster speed would be even better but vibration sets in and the water tends to spray off too quickly.

Start sanding on the outside of the discs to round out the stone, then shift inboard to smooth up. Wet sanders, incidentally, are fine for putting on that narrow bevel along the bottom edge of the stone. The 220 grit will cut fast enough to make it unnecessary to go back to the grinding wheel.

New cloth cuts so well that it is wise to have several large cabs of tougher material to condition the cloth.

Undercutting materials are peculiarly successful on wet sanding provided a generous flow of water is used. This is a "must" since a light flow would result in a fast removal of material and undercutting. Final sanding can be on 400 with lots of water or on 600 with less water. The stone should feel as if it is gliding on the surface of the cloth rather than tugging. It takes a little time to get a fine even gloss over the stone but after you try it on jade and dumortierite you will be pleased with the results. A leather buff with chrome oxide will finish these stones to a fine, even vitreous luster.

Pitts Donates Gem Collection to Florida Library

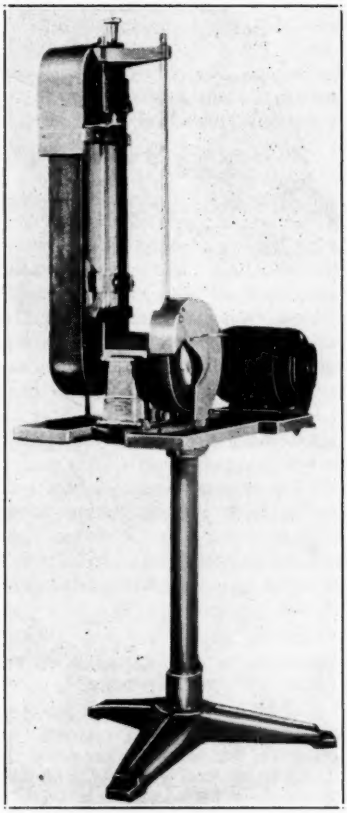
In the SUN COLONY ILLUSTRATED NEWS, issue of January 22, 1951 (published at Fort Lauderdale, Fla.) there appears on page 23 an interesting item about William B. Pitts, the noted California gem collector. Mr. Pitts has again donated a gem collection and this time to the Delray Beach Library Association of Delray, Fla. Part of the item reads as follows:

"The William B. Pitts Collection of gems recently presented to the Delray Beach Library Association and now on permanent display there was given by Mr. Pitts in memory of his sister, the late Mrs. Ada Cone.

"This is one of twenty gem collections Mr. Pitts has given throughout the country and when Mrs. Cone passed away last year, Mr. Pitts, knowing the interest she and her many friends had in his gems, believed a collection for Delray would be fitting and of interest to both the young and older members of our community.

"Mr. Pitts' donation was the first of several gifts that have been offered the library since the first of the year."

NEW WET SANDING ATTACHMENT



New Wet Sanding Attachment.

Mineral sanding methods are greatly improved with the introduction of a wet sanding attachment to the conventional dry sander, it was announced by the Nelson Lapidary Equipment Co., 520 Mead Bldg., Portland 4, Oregon.

The new wet unit attachment, first on the market, features a belt that receives a minimum amount of well distributed water without any splash. When dry sanding is desired, it can be accomplished by the same unit features without the use of water.

Outstanding advantages of wet sanding with the new Nelson Wet Sander are longer belt life, faster sanding without heating the gem. With the belt sander, convex or rounded surfaces are easily worked because of the flexibility of the belt. With the Nelson Wet Sander the belt is constantly flushed, with the result that there is no chance of the belt filling.

Nelson now offers wet and dry sanding and also wet and dry grinding in the same unit. The wet sanding feature can be added to any Nelson sander or sander-grinder for as little as $12.50.

Magazine Has Grown!

Editor R & M:

I've seen your magazine grow from a small spot to what it is today and you are certainly to be congratulated.

Harold W. Arndt
Ardmore, Pa.

December 30, 1950

Enjoys Magazine!

Editor R & M:

Have been wondering why I haven't received the Jan-Feb of R & M. Maybe the railroad strike held it up. (It did-Ed.). I have read the Nov-Dec issue through about six times and surely enjoyed it very much. Have written to about fifteen advertisers and sent orders to most of them.

Harold P. Post
Chesterfield, N. H.

February 15, 1951

LIMONITE AFTER WOOD NEAR KERSHAW, S. C.

By HORACE W. SLOCUM
320 Charlotte Avenue, Rock Hill, South Carolina

One of the lesser known collecting localities in South Carolina lies a mile and three-tenths east of Route No. 265 from Jefferson, S. C., to Kershaw, S. C.

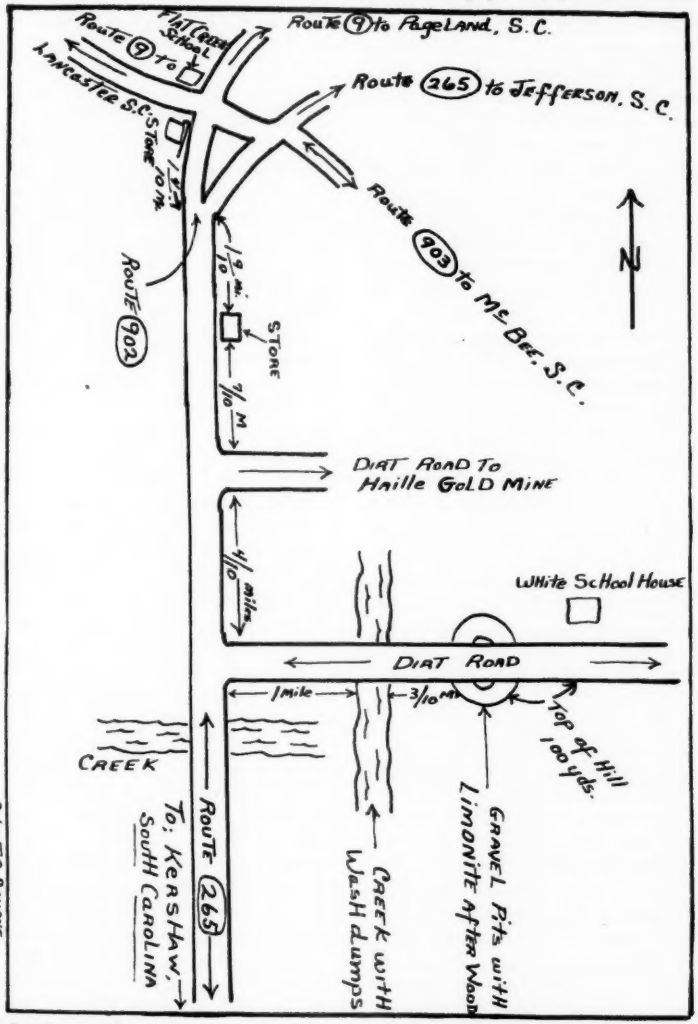
Here in an excavation beside the road, made primarily for obtaining road material, can be found fragments and chunks of trees wherein the cellulose has been replaced by limonite. Seldom found in large solid pieces, nevertheless this gravel pit has yielded numerous specimens to cut into paper weights, some of which measure 3" x 3" x 3".

The material takes a fair polish and shows the grain of the wood most pleasingly. Depending on the light in which it is viewed the polished specimens have a steely look or resemble a piece of chocolate-brown mahogany.

Starting at the junction of Route 902 from Lancaster, S. C., to Kershaw and Route 265 from Jefferson, S. C., to Ker-

shaw. follow 265 toward the last mentioned town. At 1.9 miles a small store on the left will be passed. Seven-tenths of a mile from here a dirt road turns left to the Haille Gold Mine. Four-tenths of a mile beyond the gold mine road turn left on a dirt road and in the course of a mile a creek will be crossed. There are gold mine dumps along this creek. Continue across the creek uphill for three-tenths of a mile more and on both right and left of the road the gravel pits will be seen.

Digging in the pits and at the sides of the road will produce the limonite specimens. Much of the material is badly checked and moisture has caused it to fall to pieces. However with a little searching good pieces large enough to polish into paper weights will be found.



Rough sketch map (not to scale) showing the location of the limonite after wood occurrence near Kershaw, S. C.

THE MICRO-MOUNTER

Conducted by LEO N. YEDLIN
42 Park Avenue., Danbury, Conn.

Another visit to a couple of quarries situated nearby paid dividends. At the West Redding (Redding Station), Conn, garnet deposit we drove up to within 6 feet of the outcrop (Ledge, it's called here) and practically leaned out of the car to collect. What we found were solid masses of essonite with tiny vugs of brilliant garnet crystals. The forms were primarily dodecahedrons, many modified by the trapezohedron, with a few showing the tetrahexahedron. These were brilliant, sharp and a beautiful brown-yellow. Dissolving out some of the associated calcite with HCl disclosed tiny terminated pyroxene crystals, similar to the alalite of Piedmont, Italy.

The siderite mine at Roxbury Station, Conn., is always a worthwhile locality. These minerals have been reported before, but we must repeat for the benefit of the m/m collector: Beautiful terminated quartz crystals in the interstices between the sheaves of platy siderite; brilliant tarnished pyrites, exhibiting the cube and pyritohedron; minute tan rhombs of siderite; an occasional black sphalerite crystal; and splendid lustrous arsenopyrites, scattered throughout the light tan siderite. The last are very uncommon. Only once before had we found these.

Wandering beyond New Haven. Conn., recently we encountered two tremendous trap quarries. One at Foxon was almost barren of mineral material, but did turn up some hyalite, micro xls of aragonite, a bit of prehnite, and minute surface coatings of nailhead calcite crystals. Further on, at North Branford, was one of the largest quarries we had ever seen and one of the most fruitless from the point of view of the mineral collector. We found nothing, but nothing. The operation was so large that it had its own railroad in it. The trap was coarse, clean, and wonderful from the point of view of the operators. But a total loss otherwise.

The news here is that the famous quarry at Upper Merryall, Conn., will reopen shortly, for mica, beryl and gemmy material. Columbite, tourmaline. aquamarine, uraninite and its alterations, garnet and others were produced in days gone by. The reopening should be investigated. We have seen marvelous garnet and magnetite inclusions in muscovite from here that would gladden the eyes of any m/m collector.

A letter from Paul Desautels anent his summer activities, which encompassed the area bounded by Quebec, Key West, Joplin, Missouri and the Statue of Liberty. Eight thousand miles, and a carload of minerals at each stop. And plenty for his m/m collection, including enargite from Joplin, with chalcopyrite and sphalerite; material from Hot Springs and Magnet Cove, Arkansas; and a host of others. Among other things Paul sent us some of the sharpest, bluest xls of vauxite we've ever seen.

More information regarding photography thru a binocular microscope. A detailed letter from C. L. Hartshorn of West Haven, Conn. Reproduced herewith is his missive.

"I was interested in reader Perkins remarks in the September-October issue of ROCKS AND MINERALS regarding his desire to reproduce photographically what he sees when looking thru a microscope. I have long cherished a desire to project on the screen the effects which are obtained when viewing m/ms with a good stereo-binocular microscope. I knew it could be done but only recently have I succeeded in producing a very few stereo slides which truly show the three dimensional beauty in full colors. It is not easy and there are a lot of limiting factors.

"I first tried to photograph thru each tube of the stereo-binocular microscope, combine the resulting photomicrographs into a stereo pair and view the resulting slide in the ordinary viewer. The results

were disappointing in that only a small sector of the field was common to both pictures of the stereo pair. Yet it was encouraging to the extent that this small portion gave the three dimensional effect.

"The next step was to photograph the specimen thru a monocular 'scope, making two separate photographs but changing the position of the specimen slightly between exposures. A satisfactory three dimensional effect was achieved. The procedure of shifting the specimen properly between exposures gave some trouble, but after many tries a displacement of about 1 millimeter proved best.

"When viewing a micro-mount thru the stereo-binocular microscope the eye automatically accommodates for the different planes to some extent, and the hand unconsciously manipulates the focusing adjustment to complete the satisfactory viewing of the specimen. When photographing this same object there is no eye accommodation and there can be no such adjustment of the focus. The instrument must be set on a single plane, and that is all that appears sharp in the resulting picture. You don't appreciate how shallow the depth of field is with a microscope objective until you try to focus a specimen on the ground glass of a camera. This is the most difficult thing to overcome. It is necessary, then, to select specimens that have a very flat field, and to position the specimens so that this field is at right angles to the axis of the microscope. Then, by using the lowest powers that will show desired detail, focus on a plane that will give the greatest effect of sharpness in the resulting picture. If you are lucky the stereo slide that you make will be so beautiful, and the three dimensional effect so attractive that the slide, when projected on the screen, will draw gasps of admiration from the viewers.

"I use a Leica camera with focusing back for taking the pictures. and a Stereo-Realist viewer for observing the slides. For projection, my equipment consist of a T. D. V. projector which uses the polaroid principle. I experiment on black and white film until I get what I believe is the best set-up. Final exposures are made on color film."

Let's hear from other experimenters in this field of mineralogy.

Lou Perloff accompanied us on a trip thru Massachusetts last fall and we fell in with John Kitson and Joe Rapalus of Easthampton. This was at Westfield, where we picked up some nice epidote and babingtonite. During the course of "beating our gums" about m/ms, Kitson asked if we were interested in minute xls of wulfenite, pyromorphite, cerussite and others. Were we! Well, a few miles on good roads, a climb down to the Manhan River and we found large masses of cellular quartz, loaded with clean single xls of galena, some an inch on an edge. But more important was the fact that some of the galena had altered, and we found some very nice specimens of pyromorphite, wulfenite, cerussite, sphalerite, pyrite, malachite and linarite! The locality is Loudville, Mass. We'll try to get a full article about it in a later issue of ROCKS AND MINERALS in time for spring exploring. The mine was worked during the Revolutionary War for lead for musket balls. It has quite a history.

We receive quite frequently letters and specimens from many readers of this column. We are able to acknowledge very, very few of them. Please, however, do not think that these tokens of interest are not appreciated. They are, tremendously, and without them we would be at loss as to what to write. So keep 'em coming. And belatedly, the Micro-mounter wishes all of you the greetings of the season, with hopes for good hunting for 1951.

Copy Found On Desert!

Editor R & M:

Enclosed is payment for one year subscription to R & M.

I have read but one issue so far and this copy I found out in the desert where someone must have lost it.

Leon S. Waters
Mesa, Arizona

February 17, 1951

MINERAL SHOPPERS' GUIDE

Conducted by CHARLES A. THOMAS
706 Church Street, Royersford, Pa.

This department is being accepted with more than mild enthusiasm and we wish to thank those who have made use of it so far. It is hoped that a continued interest will prevail so that the column will be a regular department in this excellent magazine. So many samples are coming in for appraisal and examination that we hesitate to claim that we will be able to return all such specimens and appliances. Those few who have made such a request will receive appliances and samples in due course. Though we cannot attempt to analyze or identify specimens, we will test for fluorescence under first class lamps. We will help buyers secure wanted specimens by redirecting queries to those who may be best suited to supply them.

The Clarkstan Corporation has advertised their alpha counter extensively in these pages. The M.S.G. has received for examination, one of these compact and efficient instruments. Known radioactive specimens were tested according to the simple directions which accompanied the counter and all of them reacted very gratifyingly. Two suspected rock samples from a nearby (Montgomery County, Pa.) quarry showed the points of light on the sensitive zinc sulfide screen. The counter has a fluorescence quencher, a control cap with its highly radioactive substance which is used to test the necessity for quenching and visual ability, and a sample of pitchblende of known count. The alpha counter is designed for efficient examination of ore samples. Though it is similar to the old familiar spintharascope, it is a much more sensitive counter with its two lens system and its expertly selected zinc sulfide powder which is carefully spread on a very thin plastic screen. The whole package is only $5.00, and the fun that goes with it is free. Serious students and prospectors will find it very useful.

If you like colorful western minerals (and who does not?) you will be tickled pink with a $3.00 assortment packaged by The Bradleys. See their ads. We received a splendid box of them some weeks ago and they deserve a special glass case all their own. The specimens deserve a complete description here, but we think it would be worth $3.00 to the reader to see for himself. The Bradleys certainly know the mineral business. Every specimen was neat and clean. The box was not only carefully packed, but The Bradleys stated that it was picked from the ready-to-mail package shelf at random. We may be one issue late in mentioning their Swiss smoky quartz. The M.S.G. received a sparkling crystal of clear smoky quartz with several 'S' faces, one of which is a double. Crystal lovers will like them. Look up their ad.

Sooner or later, collectors who wish to dress up their displays, will try Ward's Natural Science Establishment, of Rochester, N. Y. We have seen many private collections in which the quality specimens stood out with a certain aspect which we might call 'class.' Invariably the owners admitted that these specimens were obtained from Ward's. Science hobbyists are indeed fortunate that such a firm as Ward's exists. It pays to be on their mailing list anyway, so hurry and take advantage of Ward's expert selections with prices to fit every pocketbook. Ward's are friendly with everyone, beginners and advanced alike. Try them and see for yourself.

Clarence M. Jenni (see his ads) bends over backwards to please anyone making an exchange with him. Have you first-class Eastern specimens to trade for dumortierite and others? The lavender colored fan-shaped crystal groups of dumortierite are lovely and they fluoresce too, under the short wave lamps.

We know an up-and-coming young col-

lector who lives in the Collegeville, Pa., area, who was recently thrilled to tears by our old friend Don Hurley, of Little Falls, N. Y. Don must have sent him his usual generous package of specimens. Anyone looking for nice surprises? Then try Don Hurley, and it will not cost much. Include something for parcel post and Don will go overboard to please you. Don also sells rock busters' picks. The rocks are tough where Don comes from, so he must know a good pick when he sees one.

As we go along with this new department, we cannot help mentioning things that will help us and you. Writing to and fro about material takes time, and often, time runs out to make the nearest coming issue of ROCKS AND MINERALS. We would have liked to mention the following, as well as some of the other material in this copy, in the January-February issue. Gritzners, of Mesa, Arizona, sent us a package of rather fine material consisting of petrified wood, calcite, chalcedony (desert flowers), and a bang-up fluorescent specimen which contained an assortment of heavy minerals. We have not the space to go into detail, but we must mention the chalcedony and the fluorescent fluorite. The chalcedony is white, with a vermiculation in high relief. It sometimes shows a yellowish to yellowish-green short wave fluorescence in the deeper recesses of the material. Very nice. The fluorite is associated in a specimen with a transition mineral which may properly be called a willemite. Some calamine is present along with galena and a fluorescent reddish calcite. The fluorite is the brightest fluorescent (blue) that the M.S.G. has ever observed under the transformer long wave lamps. Order from Gritzners and please do not delay. It's fine stuff, and for both wave lengths.

Mr. J. E. Byron, of 1240 Pearl Street, Boulder, Colorado. is getting ready to ship a dozen micromounts in what we would say is the best method yet for shipping delicate mineral specimens. Mr. Byron has many times, sent the M.S.G. superb crystallized specimens, and through the years, not one was to be considered mediocre. One thing is for sure, and that is, that he is certainly hiding lights under bushels in his ad. After examining a sample set of a dozen micros, sent so well packed by the new method (see for yourself), we cannot think of a superlative that will describe the micros themselves. Exquisite, tiny flowers of the mineral world and undamaged in transit! And worth far more than the $2.85 per dozen. Microscopists, who appreciate clean, undamaged specimens will do well to order at least one dozen of these superb Western crystallizations. Mr. Byron is a mining engineer who distributes through sales to collectors, just for the love of getting them into appreciative hands. We think you know what we mean.

Mr. Frederick Mershon, of Morristown, N. J. (see his current classified ad) is calling for help. If anyone has or knows of fine specimens of blue fluorescent Mexican calcite (somewhat like the famous Terlingua. Texas and New Mexican blue fluorescent and phosphorescent calcite), please get in touch with Fred. He will buy or exchange fine material only. The special cabinet belonging to the M.S.G. which contains only the most rare and the beautiful of speciallized fluorescent specimens, also has several of Fred Mershon's extra special Franklins on a prominent shelf. We wish everyone could visit Fred and see his gorgeous display. Fred sends only first-class material (duplicates, not secondary). Mr. and Mrs. Mershon lecture extensively on color as it applies to ourselves and our everyday life. If interested, get his addrss from his ad and write him. He advertises under the name of Chromostones.

Complete File To Date!

Editor R & M:

Enclosed find postal note. Please extend my subscription 1 year.

I do not want to miss any number of R & M as I have a complete file to date (219 numbers) and wish to keep it complete.

Frederick A. Brown
Des Moines, Iowa

January 12, 1951

THE SAND COLLECTOR

Conducted by PETER ZODAC, Peekskill, N. Y.

Due to the keen interest in sand, as evidenced by many of our readers, we believe a column devoted to this subject is in order. This column will be run regularly, if readers will support it with notes.

Singing Sands from Au Train, Mich.

We are indebted to Kiril Spiroff, Michigan Tech., Houghton, Mich., for the following item:

"Last fall my wife and I had the pleasure of walking along the shore of Lake Superior between Au Train and Shelter Bay. What a beautiful scenic spot that is! It was after the tourist season so we were alone on the beach, with the exception of a doe that insisted upon walking ahead of us. All my wife did was to watch the deer and listen to the sand; so occasionally a wave got her feet wet. As for me, I was interested in seeing how much of the sand was magnetite.

"I am sending you a package of that "singing sand" from Au Train, Michigan. Rub the sand hard in your hand and listen to it squeal.

"You might be interested to know that the sand grains are quartz, magnetite, ilmenite and garnet. The majority of the grains are oval. but many are triangular or dreikanters."

This is a beautiful fine grained sand whose predominating color is black (magnetite and ilmenite) mottled with red (garnet) and gray (quartz). Au Train is in northwestern Alger County.

Fossiliferous Pliocene Sand from Italy

Anthony Thurston, Box 215, Worcester, Mass., has donated to R & M a small sample of brownish, fine grained sand containing numerous fossils (shells). The shells range up to ½ inch in diameter and the locality is Rosignano, Tuscany, Italy.

"The sand comes from a buried lagoon and contains numerous foraminifer and other micro-fossils. I collected it in August, 1944, during the last war," Mr. Thurston informs us.

"Petrified Wood" Sand

A. F. C. Heiser, Box 165, Fairmont, Minn., sent R & M a small sample of sand which is unique, as it contains small grains of gray petrified wood. This is a red and gray sand, coarse grained; about ½ of it is red garnet and the other ½ chiefly quartz (colorless to white also gray chalcedony plus a few grains of gray petrified wood). The sand comes from the Missouri River, about a mile or two north of Chamberlain, Brule County, South Dakota.

Beach Sand from Rio de Janeiro, Brazil

Richard L. Sylvester, 154 Parkside Ave., Syracuse 7, N. Y., sent R & M a sample of sand which comes from the beach located at the base of Sugar Loaf Mountain, in Rio de Janeiro, Brazil. It is a fine grained grayish sand consisting almost entirely of rounded colorless quartz grains (some stained brown.) The sand was collected in November, 1950, by his son, Raymond A. Sylvester, who is stationed in Rio de Janeiro as a pilot for the Pan-American Air Lines.

Sugar Loaf is a bold granite mountain standing guard at the harbor entrance with an aerial railway running up to its peak. An item in the EVENING STAR, Peekskill, N. Y. (Feb. 24, 1951,) stated that 20 sightseers were trapped for ten hours, 600 feet up in the air, in a swaying car, when a cable snapped. Rescue came when an improvised aerial car went over another cable and safely ferried the trapped passengers to the Urca Mountain Station. The accident must have happened recently, probably February 23rd.

"Earthquake Sand" from Charleston, S. C.

E. H. Sarles, 2026 Elm Ave., Norwood 12, Ohio. sent R & M a small sample of coarse brownish sand which seems to consist almost entirely of silvery mica (muscovite) partly stained brown. It is a most unique sand (muscovite sand). A note with the sample read "So called "Earthquake Sand" from Charleston, South Carolina. I do not know why

so named."

A letter from Mr. Sarles, dated February 25, 1951, reads as follows:

"The mention in your letter of the 15th that you could find nothing about the Charleston "Earthquake Sand" aroused my curosity. A tube of this sand was given me and I had not thought further about it. I am happy now to say that the uncertainty is cleared up.

"The Charleston earthquake, most violent in the history of Eastern United States, took place August 31st, 1886, and was very disastrous to the city. After the quake many small and some large fissures were left in the ground. Also many holes were made through which water was forced, sometimes spouting out of the ground. At least one of these holes was about 20 feet in diameter. The spouting water brought up with it large quantities of mud and sand. Much of the sand was from a "known" bed of quicksand and the sample we have was evidently some of this quicksand. Hence the special interest in preserving it as was done with the sample given me.

"The whole history in much detail is given in a publication of the Coast and Geodetic Survey called, or labelled as Serial No. 604, and revised in 1947. There were several editions, all of which I believe contains above mentioned account, but the 1947 is the last one to be issued. The title of the publication is "Earthquake History of the United States."

"This may be much ado about nothing," but at least my curiosity is satisfied."

Sand Trading Rules

"In discussing sand with another collector, the attached "Sand Trading Rules" was developed, and my friend suggested you might want to publish it," writes George C. Olmsted, 1129 James Blvd., Signal Mountain, Tenn. "I received a number of letters in reference to my sand article in the Sept-Oct., 1950 issue so there must be quite a little interest in sand," he continues. The Rules are as follows:

1. Sand is hard—neither dust, soil nor loam.

2. Grain size up to 1/4 inch.

3. The standard trading quantity is one fluid ounce (larger amounts appreciated), the quantity that will considerably more than overflow the tray of a penny match box. If less than this is to be offered for trade or exchange it should be called 1/3 or 1/4 standard, etc.

4. Sand should be shipped dry enough to pour smoothly unless in metal or glass containers.

5. The locality (beach, river, lake, sand pit, etc.) from which the sand came should be given, either written on a slip enclosed with the sand or written on the container. Interesting or pertinent information about the sand should always be included as it adds much to collecting pleasure. (Mention if deposit is large or small or spotty).

6. Extreme care should be used to prevent contamination by other material.

7. Packing: Sand is as difficult to pack as water. Sealed coin envelopes are good but these should be carefully folded in several thicknesses of newspapers.

8. Shipper should mention commercial uses if any.

9. Shipper should mention if the specimen is not a natural sand, viz: if it is washed, or a concentration, or an artificial mixture, etc.

10. Unless otherwise provided, shipper pays transportation.

Beach Sand from Jones Beach, N. Y.

Jones Beach near Freeport, L. I., N. Y., is not only the largest state park on the Atlantic Ocean but is said to be the most beautiful of all public bathing places on the American Continent. (Freeport is in Nassau County on Long Island). The beach has a frontage of 6 1/2 miles on the Atlantic Ocean. The sand is fine grained, grayish, and practically all quartz. Samples of this sand, from New York's famous Jones Beach, are available in exchange. If interested, send a sample of your sand (about 2 ounces will be enough) to the conductor of this column, Peter Zodac, Box 29, Peekskill, N. Y. (Be sure to give locality for your sand and advise if it comes from a river, lake, sand pit, etc).

RHODOCHROSITE IN COLORADO

By ROBERT D. ROOTS
3147 West 39th Avenue, Denver 11, Colorado

It has been several years since the fine red massive crystalline rhodochrosite called "Argentine Rose" has been in any supply on the market. And even longer since the fine cutting rhodochrosite from the Emma Mine at Butte, Montana, could be found. This last was no doubt the best cutting rhodochrosite ever found in the United States. A very nice pink color with good chatoyancy. Now while I have been asked many times for good Colorado specimens of crystallized rhodochrosite. it is still longer since they have been found here.

About the first place to be mentioned in this regard is the John Reed Mine at Alicante near Leadville, Colorado. The rhodochrosite from this mine was of a good pinkish-red color with bright cubes of pyrite inbedded. This made very good showy specimens. A visit to this mine several years ago gave very poor results as much waste rock had been piled on the dump. We did not have as much time to spend there as I would have liked, as we wanted to get back on the road before dark and go on to Leadville. Deep digging in the dump might produce some fine specimens. The Eagle Mine at Bonanza in Saguache County, Colo., also produced some good colored rhodochrosite but was not working at the time of my visit. All we could find on the dump had turned dark from exposure. I found my best loose crystal on this trip at the Raleigh Mine also at Bonanza, Colorado. There is a fair pink rhodochrosite with some small crystals to be found at St. Elmo, Chaffee County, Colorado. The old standby for Denver Rockhounds is the Moose Mine in Elco Gulch. This can be reached from Idaho Springs in Clear Creek County or from Russell Gulch in Gilpin County. Small bright red rhombs can still be found by digging in the upper dump. I believe the finest crystals ever found came from one small pocket in the Sweet Home Mine in Buckskin Gulch near Alma, Park County, Colorado. Bright red ¾ inch clear crystals in matrix. These have all made their way into collections and none are to be found now. All we can get to see is the one fine specimen in the Colorado State Museum in Denver. I have been to this spot three times and while I have found other minerals among them (small grey apatite and hubnerite crystals) still I have not found a good rhodochrosite specimen. At one time there was a great deal of rhodochrosite on the dump but a bad cave-in occurred in the mine and before it was finished over 12,000 tons of waste rock had been piled on the rhodochrosite in the dump. There is said to be a six inch streak of red rhodochrosite in a mine across the gulch from the Sweet Home Mine. But I have never had time to see it or it was at the wrong time of the year when the mine was covered over with snow and ice.

Rhodochrosite is quite common in some Colorado Counties mainly Clear Creek, Gilpin, Saguache and Park. But only in the forementioned Counties have I seen it in good pink to red crystals. As a rule these are small, ¼ inch or less. Summit County has an odd colored rhodochrosite in that it is almost white.

Many mines in Colorado have rhodochrosite as part of the gangue rock. A funny thing here is that in one place it means good ore while in another where there is much rhodochrosite the ore is of poor quality.

Rhodochrosite where it is exposed on a dump does not hold its color long as it turns dark taking on that black shiny look we call "desert paint." By breaking the larger rocks in dumps the rhodochrosite inside will be found unaltered. I believe by digging down in the dumps and getting away from surface exposure good rhodochrosite specimens could be found. It always seems that I just never have the time for this. About all we can do at present is to keep looking in the little time we have and maybe some day we will find another pocket of crystals like the one found in the Sweet Home Mine.

DR. LLOYD FISHER DIES SUDDENLY

Bates College Geology Professor Succumbs at Home at Age of 53

Native of Reading, Penna.—Was on Bates Faculty for 23 Years

Dr. Lloyd Wellington Fisher, 53, Bates College faculty members 23 years and prominent figure in State and National geological circles, died at his home, 41 Central Avenue, Lewiston, Maine, about 6 o'clock Tuesday afternoon, January 30, 1951. Death came suddenly to the geology professor who, although he had suffered a heart condition several years, attended classes regularly and took an active interest in campus and local civic affairs. In respect and tribute to the late professor, the Lewiston-Auburn Rotary Club, of which he had served as secretary since 1940, has cancelled its regular Thursday noon meeting.

Bates In 1929

Dr. Fisher came to Bates College in 1929 as assistant professor of geology. He rapidly came to be respected and admired by townspeople and students alike, and always was referred to by friends and associates as "Doc."

Gardening and collection of colored films and slides of mineral specimens were his hobbies and this added considerably to his research information and to the material on which he lectured.

A fond admirer of the gladiolus, it is said he developed a few new strains of this flower. He was president of the Maine Gladiolus Society.

Lehigh Graduate

Born at Reading, Penna., February 15, 1897, the son of George S. and Alice Maver Fisher, he was graduated from Lehigh University in 1921 with a bachelor of arts degree, and earned his master of science degree at Pennsylvania State, in 1923, and his doctorate at Johns Hopkins University, in 1929.

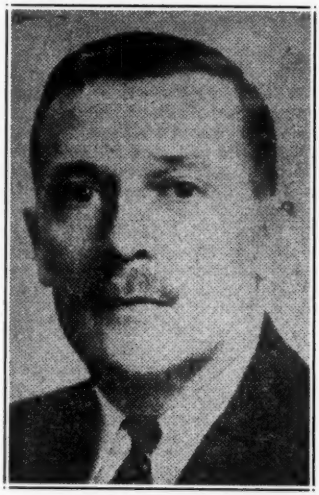
As a geologist, Dr. Fisher participated in Pennsylvania State surveys in 1921 and 1929, and served as an instructor for a Lehigh University mining trip through Canada in 1923. He was a consulting geologist during the Summers from 1924 to 1926 and became assigned to the U. S. Army engineers in 1928.

His classroom work, before coming to Bates, included serving as a teaching fellow at Pennsylvania State College, 1921-22; instructor at Syracuse University, 1922-23; and instructor at Brown University, 1923-27.

Wrote Textbooks

Recognized as a leading educator in geology, Dr. Fisher authored a number of textbooks dealing with the technical phases of the subject. He was a fellow of the Geology Society of America and the American Mineralogical Society, an executive officer of the New England Field Geologists and its present secretary, a member of the Rocks and Minerals Association, and also belonged to the American Society of Scientists.

On sabbatical leave two years ago, the professor toured Mexico, Canada and the Southwest and West of the United States. He returned with an interesting collection of geological specimens and colored slides of similar subjects. These were added to his and the college's extensive geology library which was supplemented by specimens received by Dr. Fisher from numberless Bates alumni serving in the armed forces in all parts of the globe in World War II.



DR. LLOYD W. FISHER

Headed Civilian Defense

He was appointed chairman of Lewiston's Civilian Defense organization in World War II and was among those responsible for development of an elaborate air raid warning center connected with the State network.

At the same time, in addition to his classroom assignments, he found time to correspond with countless Bates College graduates and students serving in various branches of the armed forces. He received more than 2,700 letters from them and, in response, wrote 42 monthly mimeographed bulletins containing campus news and information for his correspondents.

Grateful recipients of these bulletins rewarded him with mineralogical specimens and a collection of 125 different shoulder patch insignia. When a number of the graduates returned from service, Dr. Fisher was honored for this work and received an engraved watch.

Dr. Fisher was a member of the Lewiston United Baptist Church.

Surviving are his widow, the former Ermelinda McCarthy of Lewiston, whom he married on August 26, 1936; and a sister-in-law, Mrs. George S. Fisher, Reading, Penna.

—Lewiston Evening Journal,
Lewiston, Maine, Wed., Jan., 31, 1951

CLUB AND SOCIETY NOTES

Attention Secretaries—If you want your reports to appear in the May-June issue, they must reach us by April 15th—The Editor.

Colorado Mineral Society

The Colorado Mineral Society recently sent out post card questionnaires relating chiefly to matters of dues of rock and mineral societies. A great deal of interest in this subject was evidenced by those responding.

Questionnaires were mailed to 50 mineral societies in the Rocky Mountain area, Southwest and Pacific Coast states and answers, to date, have been received from 34 societies, representing 14 states.

As to dues, the average annual dues per adult of the societies reporting were $1.90; the minimum $1.00 and the maximum $5.00. Nine societies had dues of $1.00 per year while 15 charged $2.00 per year, others varied.

Fourteen societies rent their meeting places and 20 have cost free arrangements. The average adult annual dues of the 14 societies paying rent are $2.08 while for the 20 societies not paying rent the average dues are $1.78 per adult. Rental payments of those renting meeting places averaged $6.25 per meeting with a low of $1.00 and a high of $25.00.

Only 3 societies reported having a flat family group rate and this averaged $2.67 per family per year, with a low of $2.00 and high of $3.00. Three other societies had reduced rates per additional member from the same family, but no flat family group rate. This rather surprised us as we believe that "rock hounding" is a wonderful family hobby and that a rate that encourages the whole family to join in and all feel that they belong is both good for the family and good for the Society.

Six societies reported special rates for junior members, generally under 18 years of age, and this rate averaged $.99 per junior per year with a minimum of $.20 and a maximum of $2.00. Some societies apparently do not take memberships from minors because of the responsibility and liability involved on field trips, etc. This brings us to another interesting question—incorporation of mineral societies.

We did not ask the question in our questionnaire, but two societies volunteered the information that they were incorporated as non-profit corporations under the laws of their states. Our Colorado Mineral Society is so incorporated. Because of the many considerations in this step it is possible that it would be a good subject for study and report by the American Federation of Mineralogical Societies or by regional federations. The liabilities through injuries, accidents and results of such things as gates being left open, etc., and the responsibilities of officers and leaders of the groups should be considered.

Only 9 societies out of 34 charged initiation fees and these varied from $1.00 to $5.00 with an average of $2.00 per person.

None of the 34 societies was so fortunate as to own its own meeting place although one remarked it had a building fund and possibly others are making plans. Financing, designing, operating and maintaining such meeting places is another subject on which we might all like more information in lieu of first hand experience.

Of means for raising money other than dues, auctions lead all the rest with 23 societies indulging in this means. No society was fortunate enough to have funded backing although 11 reported they received some support from donations.

Raffles were a popular form of money raising while some revenues are raised from fairs, carnivals and mineral shows. Grab bags, advertising, "passing the hat" and collecting a percentage on merchandise sold at the meetings complete the list of "other" sources of revenue.

We wish to thank all those who participated in this survey for their cooperation.

Harold T. Hofer, Pres.
3276 Raleigh Street
Denver, Colorado

New Jersey Gem & Mineral Society
Passaic, New Jersey

The New Jersey Gem and Mineral Society of Passaic held its annual meeting February 6. Election of Officers was held:

President, Mr. Howard J. Hewitt; Vice-President, Mr. John J. Stewart; Secretary and Treasurer, Mr. Joseph C. Hanzl. All officers have been re-elected for another term.

Topic at the meeting was on Cutting, Polishing and value of Genuine Gem Minerals. Cutting and Polishing was thoroughly discussed.

Next meeting will be held March 6.

For the April meeting there will be a special program on Diamond Cutting from rough to finish. There will also be a film shown on Diamonds.

Membership is now open for new members. Meetings are held the first Tuesday of each month. They are held at the Stewart Gem and Diamond Cutting Institute, 565 Main Avenue, Passaic, N. J.

Joseph C. Hanzl, Sec.
18 East Second St.
Clifton, New Jersey

Oakland, California, Plans Big Gem And Mineral Show

June 22-24, 1951

The Gem and Mineral Show scheduled for June 22, 23, 24, 1951, at the Oakland Exposition Building in Oakland, California, promises to be the largest show of its kind ever held. There will be a greater number of interesting exhibits than in any previous Gem and Mineral Show.

Advanced plans for this big Rock Show and Convention include the display of some world famous minerals and gems. It is believed that the Hope Diamond with all its world famous romance and mystery will be shown and in addition to this there will be a Million Dollar Collection of sparkling beautiful diamonds. Several private collectors with specimens of national reputation will bring their beautiful minerals and crystals to be displaved at this Convention. There will also be the California Gold Collection which is the largest collection of gold specimens in the country.

The size of the Oakland Exposition Building is 150 feet wide by 450 feet in length and it will be jammed with commercial and non-commercial collections of the finest gems and minerals from all of the Western and Rocky Mountain States.

The Show is primarily displays from all the amateur societies and clubs of California and these exhibits will be more than worth the trip to Oakland. It is these private collections plus the world famed special exhibits that will give the Gem and Mineral Show in Oakland a truly superior atmosphere.

Dealers from every section of the United States will be on hand with minerals and materials. They will have with them many hard to get items and it will be a real buyers opportunity to see and select specimens and materials which they read about but seldom have the opportunity to examine at first hand.

All in all, the show promises to be a real treat for all who can spend a few days to go to Oakland to enjoy it.

Queens Mineral Society

The Society held its regular meeting on December 7th, 1950, at the Church of the Resurrection, 8501 118th Street, Richmond Hill, N. Y.

Mr. W. R. Wellman was accepted as a member.

After a five minute recess a roundtable discussion on 'Alterations of Minerals' was conducted by Messrs. Green and Tragert. Mr. Pfeiffer appointed Moderator and Mr. Tragert, Recorder.

There was no definite conclusion reached why a mineral alters as in some cases a loss of a mineral occurs and in some it was replaced by another mineral. The altered minerals discussed were: Pyrite to Melanterite, Beryl to Gigantolite. Loss of Lithium in Phosphates, alteration of the radioactive group, Spodumene to Cymatolite and Topaz to Muscovite.

The meeting closed after a lively discussion in which about one fourth of the members present participated.

January Meeting

The Society held its regular meeting on January 4th, at the Church of the Resurrection, 8501 118th Street, Richmond Hill, N. Y.

The Program Committee presented plans for future meetings suggesting more round-table discussions and more speakers on technical subjects. The idea approved by members present.

After a recess a round-table discussion was held on the Care and Preservation of Mineral Specimens and what constitutes a Cabinet Specimen. Mr. Marcin appointed Moderator and Mr. Stadler, Recorder.

Mr. Mitchell spoke on sulphur and displayed specimens of Aragonite, Sulphur crystals, Barite, Halite, Hauerite and a rare specimen of Hair Sulphur obtained from cores drilled in Texas. He also told of the difficulty in trying to clean the sulphur minerals. He accomplished this by using very strong salt water heated to the exact temperature of the specimen. Other suggestions: Cleaning with water when specimen is of the type requiring mild cleaning. Synthetic detergents can be used in many instances. The use of acid solutions to remove metallic oxides, such as native copper. For Glen Cove and Sayerville marcasite, concentrated sulphuric acid is an excellent means to remove sulphide then thoroughly clean with ether. This is to be done out of doors away from any flame. Hydrolized solutions accelerate decomposition. Mr. McKown found that placing marcasite in a jar of water and sealing was satisfactory when additional seal of wax is placed on top of solution. Torbernite from Spruce Pine changed to Meta-torbernite after ten years in a collection. Glassy surface lost, now has a dull surface. No definite preservative known but reduction of humidity may be the answer. It was agreed that no one method will suffice.

What constitutes a cabinet specimen was then discussed. A cabinet specimen should be a display specimen, the best available to the collector at the time. Perfection of crystallization, beauty in color or rareness, good specimens from classic localities, good massive material when it doesn't occur as a crystal specimen. Good display essential, highlighting a few rather than a conglomeration of a great number. Specialized collections such as quartz crystals, etc., general collection and locality collections.

After a lively discussion in which approximately ten members participated, the meeting closed.

Mrs. Ethel Woodward, Sec.
3413 80th St.
Jackson Heights, N. Y.

MINERALOGICAL SOCIETY OF THE DISTRICT OF COLUMBIA

A report on 1950 activities to the members at the Fifth Annual Dinner Meeting, January 19, 1951.

At the Fourth Annual Dinner Meeting, held at the Congressional Hotel, Washington, D. C., on January 20, the following officers were elected for 1950:

Lt. Col. John J. Livingston, President; Philip R. Cosminsky, Vice President; Lancaster Lowry, Secretary-Treasurer; Benjamin J. Chromy, Asst. Secretary-Treasurer.

Master of Ceremonies was James H. Benn. Chairman of the Dinner Committee was Mrs. Haliday, assisted by members of the Committee. Speaker was Major General Julian S. Hatcher, USA (ret.), who spoke on his collecting experiences in the west.

Lectures heard at the regular monthly meetings held by the Society:

February 17—Charles W. Ostrander, "Mineral and Mineral Locations in the State of Maryland."

March 17—Philip Cosminsky, "Quartz."

April 21—M. L. Peterson, "Antarctic Regions."

May 19—Mr. and Mrs. L. Robertson, "Cutting, Polishing and Jewelry Making."

June 16—Jos. Berman—"Classification of Igneous Rocks."

October 20—Jerome Eisenberg—"Classification of Minerals."

November 17—Tony Rapp, "Rare Zircon Minerals in Japan."

December 15—William Foster, "Trip to Mexico City and Monterrey."

The above lectures were usually illustrated by slides or motion pictures and were attended by an average of 70 persons. They were presented in Room 43, U. S. National Museum, Washington, D. C.

Summer Lawn Meetings.

July 29—M. L. Peterson, "Antarctic Regions" at the home of James H. Benn, Silver Spring, Md.

August 19—Dr. W. F. Foshag, "Origin of Jade", at the home of R. K. Windham, Bethesda, Md.

September 16—Action taken on the Organization of an Eastern Federation of Mineralogical Societies, at the home of P. R. Cosminsky, Falls Church, Va.

The holding of meetings at the homes of various members during the summer months has proved to be very successful. These meetings were attended by an average of 60 persons.

Field Trips and Minerals Collected:

March 2—Fort Washington, Md.—Selenite xls.

April 16—Arlington Trap Rock Quarry, Goose Creek, Loudoun Co., Va., Zeolites and associated minerals.

May 8-15—Kingston, Ontario, Canada. First International trip of this Society. Arranged by Maj. Taylor. Collected: Quartz, apatite, fluorite, zircon, cyrtolite, uraninite, feldspars, and many other minerals.

June 11—Texas, Md., Campbell Bros. Limestone Quarry.

July 9—Virginia Marble Quarry, Goose Creek, Loudoun Co., Va., Garnet, calcite, actinolite, clinochlore, tremolite, asbestos, magnetite, and other minerals.

August 13—Dumps of the Baltimore Aqueduct, Baltimore, Md., Serpentine, zeolites and associated minerals.

September 9-10—Amelia, Amelia Co., Va., Microcline, spessartite, garnet, mica, tantalite, tourmaline, albite, and other pegmatite minerals.

October 8—Fisher's Gap on Skyline Drive, Madison Co., Va., Unakite.

Executive Committee Meetings.

April 29 at the home of James H. Benn, Silver Spring, Md.

Membership.

There were 10 new members admitted to the Society during the year and one reinstatment. Total active members on the list: 160.

Elected to Honorary Membership: None

Elected to Life Membership: None

Deceased: Mr. J. H. Brodrick; Mr. Black, Mr. Clark, and Mrs. L. W. Klopfer.

Mineral Minutes

Twelve issues (Vol. 8) of Mineral Minutes, official organ of the Society, were published and distributed to the members. This publication was edited by Mr. French Morgan, assisted during his absence from the city by Mrs. L. Lowry.

Outstanding Mineral Collecting.

Miss Helen McLeod found a rare rose quartz crystal while vacationing in Maine.

Maj. and Mrs. J. D. Atkins uncovered a vein of unusually fine prehnite, apophyllite, byssolitic amphibole, quartz xls, and several minerals as yet undetermined. The location of this find has not been disclosed, except that it is somewhere in Fairfax Co., Va.

General Julian S. Hatcher used a powerful electro-magnet to collect some interesting specimens of magnetic iron oxides at Canyon Diablo, Arizona, and also to collect magnetic sand in the area to the north of this meteoric crater. The exact origin of these specimens is at present undetermined, but it is believed that they may prove to be meteoric fragments.

Mr. Cosminsky found minute xls of babingtonite at the Arlington Traprock Quarry, Loudoun Co., Va., the first time this mineral has been reported from the State of Virginia.

Mr. Morgan found a large specimen of epistilbite at Mineral Hill Mine, north of Sykesville, Md. The first report of zeolite in this area.

Conclusion.

Many choice specimens of minerals were donated as door prizes by the members.

It is gratifying to note an increased activity on the part of the membership in the study and acquisition of mineral specimens. It has been my pleasure to visit in the homes of many of the members, and to note the en-

largement and better classification of some of the private collections.

Various members of the staffs of the U. S. National Museum and the U. S. Geological Survey have been very helpful in furnishing information to members of the society, and their kind assistance is gratefully acknowledged.

During the past year this society was instrumental in the formation of an Eastern Federation of Mineralogical Societies.

One regretable incident occurred to mar the otherwise enjoyable ninth year of operation of the Society. Our President, Lt. Col. John J. Livingston, was ordered to overseas duty in October, and was unable to round out his third year as a most excellent leader of the society.

Respectfully submitted,
Philip R. Cosminsky, Vice-President

Mineralogical Society of the District of Columbia

November Meeting

At the November meeting, Mr. Anthony Rapp gave a talk on work being done in Japan on three series of rare zirconium minerals. Mr. French Morgan exhibited some fine specimens of apophyllite and fluorescent dogtooth calcite from Goose Creek Quarry. Major John D. Atkins, Jr., reported a new source of prehnite in Fairfax County, Virginia, and exhibited prehnite specimens equal to any found at Paterson, New Jersey, and fine specimens of clear apophyllite on prehnite. Colonel Mitchell exhibited three trays of gemstones.

At the January meeting Mr. and Mrs. William J. Foster presented an illustrated talk on their recent visit to caves in Mexico.

John D. Atkins, Jr.
502 Belleview Drive
Falls Church, Virginia

5th Annual Meeting

The 5th Annual Meeting of the Mineralogical Society of the District of Columbia was held at the Cloud Room, U. S. National Airport, at 7:00 p.m., January 19, 1951.

Sixty-three members and guests enjoyed a roast chicken dinner. Master of Ceremonies was Mr. Floyd Rapp. Mrs. W. Foster was chairman of the dinner committee, assisted by Mr. Foster, Mr. and Mrs. C. Gerber, Mr. and Mrs. W. Haliday and Mrs. J. J. Livingston. Between courses, General Julian S. Hatcher made a short but interesting talk on his second collecting trip to the meteoric crater at Canyon Diablo, Ariz. He passed around several specimens of meteoric material for examination.

At the conclusion of the dinner the president's annual report was read by P. R. Cosminsky, vice-president; the president, Lt. Col. John J. Livingston, having been assigned to foreign duty in October. The secretary-treasurer's annual report was presented by Mr. Lancaster Lowry.

The only business transacted at this meeting was the election of officers. Officers elected for 1951 were Philip R. Cosminsky, president; Benjamin Chromy, vice-president; Lancaster Lowry, sec-treasurer; Wanda Burnett, ass't. sec.-treasurer. Mr. James Benn was re-elected for a three year term as director.

Acting upon a motion approved at the December meeting, Miss Sipes took up a collection of $20.75 to be used in purchasing mineral textbooks for some needy foreign institution, via CARE.

The evening was rounded out by a talk on Arkansas quartz crystals. This talk was made by Dr. Hugh Miser of the U. S. Geological Survey and was illustrated with slides taken by Dr. Miser on his many trips to Arkansas.

Maj. John D. Atkins, Jr.
502 Belleview Drive,
Falls Church, Va.

Gem & Mineral Society of San Mateo County

The Gem and Mineral Society of San Mateo County will hold its second Annual Exhibit at the Gymnasium of the Junior College, Second Avenue, San Mateo, Calif., on May 5 from 11:00 A. M. to 10:00 P. M., and May 6 from 10:00 A. M. to 9:00 P. M.

The Exhibit will be held in co-operation with the Geology Department of the San Mateo Junior College.

Alice G. Sharp, Cor. Sec.

Club Organized in Syracuse, N. Y.

R. L. Sylvester, 154 Parkside Avenue, Syracuse, N. Y., announces the formation of a mineral club in his city. Meetings are to be held in the Syracuse University Geology Building. All readers and subscribers residing in the Syracuse area and who may be interested in joining the club, are urged to contact Mr. Sylvester.

Club Planned For Western Ohio

All readers and subscribers residing in west central Ohio or east central Indiana who may be interested in forming a mineral club for their area, are urged to contact Walter F. Eisele, Arcanum, Ohio. Mr. Eisele is interested in forming such a club, if enough collectors will give him their support.

Club Planned for Scranton, Penn.

Wanted: Fellow-mineralogists to form a mineral club in the vicinity of Scranton, Penn. Facilities of Everhart Museum of Scranton (Mr. Clay Aldridge, director), available. Write to Howard Ennis, 321 N. Washington St., Wilkes-Barre, Penn., or to Rev. William J. Frazer, 625 Main St., Moosic, Penn., and indicate your interest.

Newark Mineralogical Society
January Meeting

The 278th meeting of the Newark Mineralogical Society held January 7th, 1951, took us on a delightful mineral collecting tour with Dr. Frederick Stenbuck, of Mt. Vernon, N. Y., who described some of his experiences in collecting minerals in Mexico. The talk was accompanied by numerous color transparencies of Mexican scenes, people and mines. Highlights of the talk were the descriptions of his collecting in several mines, in which the Rayas mine in Guanajuato was most productive of specimens. This mine has been in more or less continuous production for about four hundred years, in the course of which many millions of pesos of silver have been taken from it. Among the specimens from Guanajuato which he brought back and which were on display were such rare ones as Valencianite and Guanajuatite. Other specimens shown were Calcites of various habits of crystallization, Amethyst, Minium, Vivianite found in the tusk of an extinct mammoth, Sodium Chloride from Paricutin volcano, Ilmenite, pink Garnet var, Xalostocite, Apatite crystals in matrix from the Cerro Mercado mine at Durango, Martite, and arborescent native iron from the same locality. Pre-Columbian beads, stone masks, copper skin dressers and other artifacts of ancient Indian culture also were on display. The color slides also included views of Paricutin volcano and pictures of the jewels found in the now famous Tomb Number Seven in the ruins at Monte Alban near Oaxaca, which are now in the Oaxaca State Museum at Oaxaco.

On the return trip Dr. Stenbuck passed through the Tri-State area, where he visited the well known mineral dealer, Mr. Boodle Lane at Galena, Kansas, and went underground to collect sphalerite specimens in one of the numerous zinc mines of that locality.

At the business meeting which preceded Dr. Stenbuck's talk the Society unanimously voted to become affiliated with the Eastern Federation of Mineralogical Societies.

January Field Trip

Our field trip in January took us on a tour of the mineral collection of the American Museum of Natural History in New York City, with the able and affable curator of minerals, Dr. Frederick H. Pough as our guide. We were enthralled by the beauty of the specimens exhibited. The collection of polished and cut precious material interested many of the members.

The case of New York City minerals prepared by the New York Mineralogical Society was amazing in that no one expected to see so many minerals from the world's largest city.

The specimens of the two New Jersey exhibits of Franklin and Paterson minerals, many contributed by John Albanese, a member of our club, were familiar to all the members who felt they were old friends whose counterparts were in their own collections.

February Meeting

The talk at our February meeting might well have been titled STRANGE BED MATES. Mr. Henry E. Millson, Assistant Director of Applications Research Laboratories, Calco Chemical Division of American Cyanamide Corporation, Bound Brook, N. J., was the lecturer. The subject of his lecture was "Observation on Exceptional Duration of Mineral Phosphorescence," which he illustrated with breathtaking kodachrome phosphorographs. He told us that the purpose of the investigation was to obtain data concerning the duration of phosphorescence of minerals.

Studies have shown that the phosphorescence caused by a short exposure to 2437A ultraviolet rays will continue for a long period of time. Dark-adapted eyes were used to determine the duration of colored and colorless phosphorescence and photographic film was used to obtain phosphorographs and thereby record the emission of light long after it became imperceptible to the eye. Protracted phosphorescence has been discovered in calcite, fluorite, spodumene, wernerite, willemite, and synthetic phosphors. After an initial exposure of one minute, Texas calcite emitted an afterglow which was distinguishable to dark-adapted eyes for 4600 hours and was capable of producing a photographic image after more than 5½ years. Fluorite from Trumbull, Connecticut, given to Mr. Millson by Mr. Edwin Skidmore, of Mountainside, N. J., similarly exposed, continued to emit a phosphorescence perceptible to the eye for more than 8 years. The Texas calcite, fluorite, and spodumene are still phosphorescing.

Several years before World War II Mr. Millson and his son started experimenting with mineral phosphorescence, a project in which the United States Government was vitally interested. The experiments had to be performed in total darkness thus requiring Mr. Millson taking his specimens to bed with him under several layers of covers. He told of many bruises acquired as a result of passing the specimen in front of his eyes in total darkness. He described a painfully humorous incident which occurred when he took a piece of Pectolite to bed. He picked splinters from the various parts of his anatomy for a long time. Mrs. Millson had to sacrifice her rights to the frigidaire when her boys found out that cold arrested phosphorescence and stored their specimens therein.

The source of excitation energy was a Skidmore Quartzlite, a low pressure mercury vapor lamp, developed by Mr. Edwin Skidmore. The radiation from this cold-quartz lamp is peaked sharply at 2537 A. For phosphorescent

excitation the unfiltered radiation of the lamp was allowed to fall upon the specimen for one minute at a distance of 2.5 cm. The high emission of 2537 A radiation by the Skidmore lamp is responsible for the prolonged observation of phosphorescence in many minerals.

Mr. Millson explained when the intensity of phosphorescence fell below the threshhold of human vision, a photographic film (Kodak sheet contrast process panchromatic) was used to detect continued light emission. The photographs produced in this manner have been termed phosphorographs. Specimens used for taking phosphorographs must have a smooth or polished surface so that the glowing areas come in direct contact with the photographic film. If the specimen has a rough surface the negative will be blurred by the emitted light and the outline of the phosphorescing areas will not be clearly defined. The phosphorographs of the glowing areas were obtained by placing the phosphorescing mineral on a negative in the dark and allowing it to remain in the same position for a definite length of time. In order to obtain a distinct outline of the specimen, the sides of the mineral were covered with light-proof material. This prevented light emitted from the portion of the mineral immediately above the film from fogging the negative at the sides with consequent loss of definition of the image. When the negative was developed and printed all of the glowing areas were plainly evident. By using this technique it was possible to demonstrate that irradiated substances continued to emit light long after the intensity of the afterglow was too weak to be discerned by completely dark-adapted eyes. Beautifully colored phosphorographs were obtained by using Kodachrome film Type B. Colored film has an advantage over black and white film in that it allows an identification and a permanent record of the colors emitted by phosphorescing minerals. Although phosphorescence of very low intensity appears colorless to the eye, minerals nevertheless record various colors on Kodachrome film.

Specimens of scheelite although visually colorless produced a blue Kodachrome phosphorograph. In this particular case there may be a combined effect of the emission of ultraviolet light together with blue light in the phosphorescence. Scheelite is known to emit ultraviolet as well as visible light during fluorescence, and this may also be true for the phosphorescent process. Calcite specimens from Franklin, New Jersey, produced Kodachrome phosphorographs varying in color from an orange-scarlet to a yellow-orange. Pink beryl, morganite variety from Haddam Neck, Connecticut, produced a bright cerise pink, and Willemite from Franklin, New Jersey, gave a brilliant green.

The detailed results of this study were printed in the *Journal of the Optical Society of America*, July, 1950.

Gerry and Will Shulman, Co-Chm.
Publicity Com.
113 Huntington Terrace
Newark 8, N. J.

EXCHANGE BUREAU

This Exchange Bureau is being established for the purpose of assisting members of the various Mineral Clubs (belonging to the Mid-West Federation) in their efforts to exchange mineral specimens. It has been authorized by the Executive Board of the Mid-West Federation under the direction of the following named committee:

Frank J. Sadilek, Chairman, 1308 West 42nd Street, Des Moines, Iowa; Frank J. Campbell, Waterford, Michigan; Frank L. Fleener, 222 So. Park Road, Joliet, Illinois.

Heretofore it has been rather difficult to make contact between members who have a surplus of certain types of specimens and are anxious to secure (through some central source) the names of other members who are in like position. Every collector has certain duplicates that he is more than willing to send to another member, each having access to certain types of material that are not available to the other. The proper procedure to make such interchange is as follows:

Each party interested will submit (to the address below) a detailed list, with full description, information as to quantity, etc., of what he or she has to offer. This will permit the Exchange Bureau to make up a mimeographed list of this information for the perusal of those interested.

Each list is to be submitted accompanied by 9 cents in stamps, it being thought that this will take care of the expense in issuing the Bulletin and the return postage to the subscriber. Some slight delay may occur in securing a sufficient number of names for the first issue, and it is contemplated that this will require from 30 to 60 days. However, if an active interest is shown in the beginning, a list will be made up promptly. A copy of this to be made in such quantities as will permit distribution to various Club members through their authorized Secretary.

There is no desire on the part of the Exchange Committee in any way to detract from the sale by regular dealers of their products. They do feel that this manner of exchange will only add to the already growing field of collectors.

The above rules are to apply until such time as further experience leads to necessary changes. The Committee invites such constructive criticism as any of you may have to offer.

Mid-West Mineral Exchange Bureau
1308 West 42nd St., Des Moines, Iowa

Cincinnati Mineral Society

The regular monthly meeting of the Cincinnati Mineral Society was held Wednesday, October 25, 1950, at the Cincinnati Museum of Natural History, Cincinnati, Ohio.

Mr. James Clements presided at this meeting. Mr. Clements announced appointment of Past Presidents. Mr. Frank Atkins, Mr. Edgar Sarles, and Mr. Gschwind as a nominating committee for nomination and election of officers for the coming year. Mr. Clements also welcomed as a visitor to this meeting Mrs. Dudley A. Levick.

Mr. Gschwind, secretary, expressed on behalf of the Society, appreciation and admiration for the enterprise shown by the following societies in editing and distributing their publications and including our group in their mailing list: "The Conglomerate" of the Michigan Mineralogical Society, "The Pick and Dop Stick" of Chicago Rocks and Mineral Society, and the "Trilobite," of the Wisconsin Geological Society.

Mr. Sarles, chairman of field trip committee, announced a field trip to Nashville and Bloomington, Indiana, an overnight trip scheduled for October 11, and 12; with an overnight stay at picturesque Nashville, Indiana.

Mr. Grover Hubing, chairman of the program committee, introduced as speaker for the evening our own Mrs. Ralph Clark, Jr. Mrs. Clark chose as her topic "Folklore and Mythology of Gems and Rocks." Mrs. Clark presented very capably a little known side of gems. The intimate and detailed knowledge of beliefs and superstitions surrounding gems and minerals thru-out the ages. Most of these beliefs were substantiated by citing known properties of these minerals as demonstrated in the light of present day knowledge. The considerable research and ability to co-ordinate and interpret this material, was the outstanding feature of Mrs. Clark's discussion.

The interest aroused by this excellent talk resulted in quite a spirited discussion period. The end of this period marked the close of another highly successful meeting based on our theme for the year; "Member Participation."

December Meeting

The regular meeting of the Cincinnati Mineral Society was held Wednesday, December 13, 1950, at the Cincinnati Museum of Natural History. Mr. James Clement presided at this meeting which quickly got under way with brief reports of field trips.

Mr. Sarles reported on a trip to Brummets, Stephens and Bear Creeks near Nashville, Indiana, and to a quarry at Bloomington, Indiana. Mr. Sarles was accompanied by Mr. Gschwind, Mr. Younker and Mr. Roy Grossman of Batesville. Ind. Outstanding was the occurrence of small radiating white groups of strontianite crystals at the quarry.

Mr. Levick described a trip to Mirandy Run Creek, Brown County, Ohio, for vivianite crystals. He was in the good company of Mr. Sarles and Mr. Clements. The location yielded some good vivianite crystals as always.

Mr. Sarles, Mr. Gschwind and Mr. Winnes of the Dry Dredgers made a trip to the almost inaccessible Bruin Gap Area in Elliott County, Kentucky. This is the famous Kentucky kimberlite location. Good samples were obtained including soil samples—still no diamonds!

Mr. Clements announced candidates for offices as recommended by the nominating committee; and conducted the election of officers. The following are new officers for the year 1951:

Ralph Clark, Jr. ..... President
Grover Hubing ..... Vice President
Frank Atkins, Jr. ..... Treasurer
Charles L. Gschwind ..... Secretary

Mr. Grover Hubing was introduced as the member speaker of the evening. Mr. Hubing chose as his subject, one of his favorite minerals, namely ilmenite.

His extremely competent talk on this mineral was briefly as follows:

Ilmenite—a hard, heavy, black, tough mineral. Specific gravity 4.7, hardness 5½ to 6, color iron black, streak black to brownish red. Composition ferrous titanate $FeTiO_3$. Infusible and difficulty soluble in hydrochloric or sulphuric acids. Chiefly massive, with no cleavage and crystallizing in the hexagonal rhombohedral system. It forms in basic igneous rocks as a result of fractional crystallization, known as magmatic segregation. Somewhat similar in molecular structure to corundum Al_2O_3.

Proof of the lack of cleavage was demonstrated by a basic diagram of atomic arrangement. Atoms of titanium and iron and oxygen are offset in the hexagonal structure both vertically and horizontally, thus obviating cleavage because of lack of alignment of atoms of any one element. The diagram also indicates graphically the reason that ilmenite is difficult to separate into its elements for commercial use of titanium.

Titanium has its chief uses in the manufacture of paint pigments, paper coating, as an alloy in metals because of its ability to hang on to oxygen atoms. It is also widely used as a coating for hidden arc welding rods.

Titanium has great promise as a base alloy metal in the years ahead based on its high temperature resistance, and strength, and because titanium dioxide represents one-eighth of one percent of the earth's crust. It has a minor use as a highly attractive synthetic gem "Titania."

Largest production of rutile and ilmenite in United States is in Virginia. The Adirondack magnetite deposits contain considerable ilmenite. The sands of Trail Ridge, Florida, produce 2% heavy minerals of which Arizonite $Fe_2O_3 TiO_2$ and not ilmenite is the major mineral. The bulk of titanium is imported from British India

Frank Atkins introduced a motion "For Approval and Commendation of the work of the retiring officers." This was heartily approved and thus brought to a close a very successful year for the Cincinnati Mineral Society.

Charles L. Gschwind, Sec.
6931 Diana Drive
Cincinnati 24, Ohio

Mineralogical Society of Arizona

The December meetings of the Mineralogical Society of Arizona were colorful, as December meetings should be. The first one, highlighted as our Society birthday, was quite hilarious as the result of a spelling bee of mineral names and also a true or false questionnaire about minerals. The 2nd meeting was a swap and Christmas party, and the one field trip of the month was to a quartz and pyrite crystal area in Yavapai County.

The four meetings held in the first two months of the New Year have been both interesting and profitable. On January 5th Mr. Fred H. Bitner of Scottsdale gave a very interesting talk, accompanied by Kodachrome slides, of parts of Arizona, Utah and Colorado —all within not too far driving distance from our locale. On January 19th an auction was held with some very fine specimens being donated by members and friends, and the sum of $60.00 realized. May sound like a lot to some and like not much to others, but we hope to express a feeling of brotherhood and friendship in our Society, rather than that of too much money-making in our dealings with each other. We added ten new members in January, and our field trip was to a geode area in Pinal County.

February: At our first meeting one of the best demonstrations of Fluorescence we have had was given to a group, including several out of state visitors, that filled our hall. President Benham, instructor in physics at Pheonix College, outlined the basic principles of wave length, which was followed by short and long wave length showing by Mr. A. L. Flagg and Mr. Fred H. Bitner, of such materials as cloth, locust wood, cheap glass, etc. And on February 16th, Mr. W. N. Moore brought his saw and the necessary tools to put on a demonstration of gem cutting, which was entertaining and proved very helpful, especially for those who have not emerged from the plain rock hound status. February field trips included one to an area where the black tourmaline specimens are found imbedded in pegmatite dikes, in Maricopa County—and the second to a geode area near Wickenburg, also in Maricopa County.

Spring is coming to the Valley, and with the lengthening days not only is mineral hunting more enjoyable, but very soon we will be seeing the myriad small, desert blooms. Preparations for the Rocky Mountain Federation Convention to be held here in June this year are going on apace. We welcome you to the land of room enough and time enough.

We meet on the first and third Fridays of each month in Assembly Hall, 1736 West Van Buren Street, at 8 P. M., in Phoenix, Ariz.

(Mrs.) Charlotte B. Ferris, Pub. Chrm.
Rancho Noche de Paz.
Box 493, Route 1
Phoenix, Arizona

Chicago Rocks and Minerals Society January Meeting

Member exhibits at the monthly meetings of the Chicago Rocks and Minerals Society are attracting keener interest with each new "show." Among the exhibitors at the January meeting were: the Lorenz Gleiser family with fine specimens of marcasite from Lake Michigan; the Louis Holtz family with excellent minerals from the Bad Lands of S. Dakota; James Davis with a 500 carat brilliant cut Brazilian topaz and an amazing flower agate; Herbert and Oriol Grand-Girard with 17 forms, colors and crystals of barite; Arthur and Allen Hahn with pink gypsum and salt crystals; Selma Jenner with delicate pieces of adamite, wulfenite, apatite and mimetite; Gertrude Hannen with polished thunder egg halves and cut azurite nodules. A very clever and amusing feature was a Mineral Take-off collection thought up by Mrs. Simone Anderson, with 25 or 30 "minerals" composed of macaroni, wires, celophane, etc. Outstanding were the "geodes" of egg shell halves lined with various real crystals. Several exhibitors brought specimens for others to help identify.

The speaker was Dr. W. E. Powers of Northwestern University who gave a fine talk on "The Origin and Culture of the Eskimo and Geology of Greenland" illustrated by his colored slides.

February Meeting

The speaker at the February meeting of the Chicago Rocks and Minerals Society was Edwin Goff Cooke, Camera hobbyist and lecturer and a member of the Society. His subject "They Too Passed By" referred to the prehistoric inhabitants and geology of Frijole and Chaco Canyons in New Mexico and Canyon DeChelly National Monument in Arizona. The lecture was illustrated with fine colored slides and movies taken by Mr. and Mrs. Cooke.

The meeting also celebrated the fifth birthday of the Society and over one hundred members and guests were present, the largest number to date.

Mrs. Clell M. Brentlinger
339 Kenilworth Ave.
Kenilworth, Illinois

Los Angeles Lapidary Society

The ladies of the Los Angeles Lapidary Society took over the January meeting and entertained the society with a two-act playlet entitled "We're Going to the Desert." Under the capable direction of Mrs. Jessie Chittenden, the "gal" portrayed an average family discussing their pending vacation. Each member of the family wanted to go to a different place for reasons applying to their particular interests. For example, "Sis" preferred the beach so she could get a nice sun tan. Auntie wanted to go to the mountains to gather flower arrangement material; Grace wanted to paint; Bud wanted to capture animals; and Ma wanted to rest. None could agree on where to go, so Pa, the rockhound, convinced the family that the desert could satisfy all their desires.

When the family returned from their vacation, they all agreed that Pa was right for each had found on the desert that which they as individuals were seeking. All agreed that "Pa" was a wise old gal—I mean boy—and that the desert was glorious vacation land. The cast:

Pa ..... Jean Bennett
Ma ..... Goldie Woods
Sis ..... Marguerite Wilson
Bud ..... Alpha Evans
Auntie ..... Frances Cupp
A Friend ..... Grace Peters

Between acts, Claire Schroeder gave her version of "The Thing," climaxed at the end with "The Thing," a rockhound (Pearl Robertson) in full rockhound regalia, escaping from the box and dashing off stage.

Following "We're going to the Desert" color slides of the desert in its innumerable moods and field trips on our California deserts were shown by Goldie Wood.

Jean Bennett's interesting collection of desert purpled glassware was on display. Mrs. Bennett's latest hobby is coloring crystal ware by the desert sun. She told us many interesting things she had learned about the coloring of glass by sun radiation. "Contrary to general opinion," she said, "it is not the heat of the sun which colors clear glass, but the reaction of the ultra violet (actinic) rays of the sun on certain minerals and compounds included in the sand used in the production of glass.

"Old glass, almost without exception, will turn purple. The older the glass the more quickly it will color. Some few pieces of modern glass will also become lavender or purple. This is especially true of very inexpensive glassware (five and dime store). Better grades of modern glass as a rule, turn a shade of Citrine—straw yellow, golden, smoky yellow or brown.

"In observing various pieces of glassware which have been exposed to sun radiation, it has been noted that all glass does not respond in the same manner to reach its ultimate color. Some pieces, especially the older ones, take on the lavender, pink or violet tones directly (within varying time lengths), while others go through transitional changes before reaching that stage. For instance, one type will, after a time, present a dull smoky gray hue, with lavender gradually replacing the gray color. One of the most interesting changes is the type which first turns a deep copper color with a superimposed reddish tone. It is this reddish tone which is the clue to subsequent purple glass, as many pieces become copper toned and remain that color. Glass which takes on the reddish copper tone becomes the most beautiful of all purple glass, a deep rich wine color."

The rockhound hobby has again invaded the realm of art magazines outside the lapidary field. In the spring issue of THE WESTERN WOMAN, a magazine devoted to the promotion of fine arts, an article entitled "A Fascinating Pursuit" was published on the collecting and polishing of gemstones as the Gundersons do it. We are glad to see articles such as this in magazines such as THE WESTERN WOMAN for it reaches readers who might some day become rockhounds.

February Meeting

Dr. Owen B. Dwight gave a very informative lecture to the Los Angeles Lapidary Society on the art of casting of natural objects, such as leaves and flowers, in gold and silver. He illustrated this unusual method of metal casting with color slides. Dr. Dwight compares this type of casting to that of the lost wax method, and he calls it "the lost leaf method." His technique is particularly unique in that only one reproduction can be made of an object such as this and duplication is almost impossible. This feature, he told the group, appeals to the hobbyist. Castings of this kind are readily adaptable to the mounting of cabochons and faceted stones and which in a great many cases will enhance the piece of jewelry.

"First of All," he explained, "One selects a small leaf or flower that you wish to reproduce in gold. A sprue of wax is attached to the underside of the leaf through which the metal is forced into the mold. This is then placed into a casting flask and carefully covered with a heat resisting investment such as cristobalite. The flask is then placed in a high temperature oven and baked at 1400 Fahrenheit for about one half hour. This burns out all of the wax, the natural leaf, and what ever residue might remain in the mold. The flask is then fitted into an ordinary dental centrifugal casting machine, the gold is melted and cast into the mold.

"This method reproduces the leaf so faithfully that even the tiny fibrous hairs that are present on most leaves, appear in the gold castings. In order to polish the castings these tiny projections must be removed. This process may be done with small rubber abrasive

wheels attached to a flexible shaft. Extreme care is required in this operation to avoid distorting the contour of the leaf itself. The polishing of the castings is one of the most important and tedious jobs in the process because much care must be used to avoid overpolishing."

The exquisite collection of leaves and flowers which Dr. Dwight displayed to the society qualified him as an expert. There were ear rings, pins, brooches, pendants all reproduced in gleaming gold and silver. Some of the very intricate and delicate flowers, such as the canary bird flower (Crotalaria) are done in sections and put together with adhesive tape on the underside (before casting) in order to give the castings sturdiness. One set of geranium leaves, ear ring, brooch, and pendant, set with lovely blue aquamarines, was particularly outstanding.

The faceteers at their last regular meeting elected Mrs. Dorothy Alford as their new chairman. This is the first time this branch of the Los Angeles Lapidary Society has chosen a woman for their chairman. Dorothy does a swell job of faceting and she has very fine plans for her meetings this coming year. The Faceteers meet on the third Monday of each month to discuss problems and projects related to faceting gem stones.

The L. A. L. S. meets on the first Monday of every month at the Van Ness Playground at Slauson and Second Ave., Los Angeles. Visitors are always welcome.

Vic Gunderson, Pub. Chm.
2152 W. 83rd Street
Los Angeles 47, Calif.

Rochester Academy of Science
(Mineral Section)

It has recently come to our attention, rather embarrassingly, that we have done little in the past few years to publicize our activities here in Rochester. Accordingly, please accept the following as a belated resume of this year's work.

Officers elected for the year beginning in May, 1950:

President ..... Leo J. Houlihan
Vice President ..... Albert Gerling
Treasurer ..... George Costich
Secretary ..... Ernest St. Mary
37 Stoneham Drive
Rochester 10, N. Y.
Curator ..... John Hartfelder
Program Chairman ..... Richard Hughes

During the summer, a number of field trips were taken, to local mineral deposits and to the Titanium mines at Tahawus, N. Y., and the Garnet Mines at Gore Mountain.

The October meeting featured an exhibit of mineral specimens collected by the members during the summer, and many colored slides taken by several of the members on their summer trips.

For the November meeting, Mr. Leo Houlihan gave a unique demonstration on a portable lapidary unit, showing all the steps in the cutting of a faceted stone. The stone, a large citrine donated by Ward's Natural Science Establishment, was given as a door prize.

The part played by minerals in world politics was the theme of a talk given by Mr. Richard Hughes at the December meeting, after a dinner put on by the ladies of the club.

The membership of the section now numbers nearly fifty, and considerable interest is being shown in the formation of a lapidary group. Future meetings include a talk by Dr. William Jenks of the University of Rochester on field aspects of geology.

Ernest F. St. Mary

Tucson Gem and Mineral Society

On January 2nd Miss Catherine Lancaster addressed the Tucson Gem and Mineral Society on pigments derived from minerals and used in ceramics coloring. On January 16, Mr. S. L. Wolfson showed a collection of color slides of moss, plume and scenic agates furnished by Dave Harris of El Paso, Texas.

Meetings are first and third Tuesdays of each month, in the Arizona State Museum Bldg. U. of A. campus, at 7:30 p.m. Visitors are always welcome.

David P. Record, Pub. Chm.
4400 So. Mission Road
Tucson, Ariz.

San Diego Mineral & Gem Society

Listed below is a list of 1951 officers elected at the general meeting in January:

President—W. L. Wart, Box 262, Route 1, National City, California.

Vice President—Charles J. Parsons, 126 Taft, El Cajon, California.

Treasurer—Leslie F. Burns, 322 Kimball Terrace, Chula Vista, California.

Corresponding Secretary—Nellie M. Bryant, 3741 Warner Street, San Diego 6, California.

Letha W. Brown, Pub. Chm.

Pomona Valley Mineral Club

The regular monthly meeting of the Pomona Valley Mineral Club, Inc., was held Tuesday, January 9, 1951, in Room 8, Chemistry Building, Pomona College, Claremont, Calif.

A fellow member of the Club, Miss Pauline Saylor, entertained the members with a very descriptive talk on the "Mother Lode Country", which was accompanied by colored slides taken during a tour with a girl friend. The two of them encountered numerous amusing experiences, the telling of which was enjoyed by the group.

Plans were being made for a field trip to the Muroc Lake vicinity, the date to be announced later.

J. LeBrun, Pub. Chm.

Pacific Mineral Society

Pacific Mineral Society elects officers for new year, January 19th, 1951. R. J. Wilson is the new president with Jim Underwood, first vice-president and Rev. John S. Weston, second vice-president. The new secretary is Mrs. H. E. Eales with Jack Lasley as treasurer and Guy F. Morris, Jr., will lead us on our field trips. Mr. A. R. Zwaschka was voted in as director.

The December field trip to Death Valley for the New Year holiday, seems to be almost an annual affair this being the third New Year the Society has spent in the Valley. They always come home with wonderful specimens of onyx, fluorite, calcite, ulexite, hanksite, and many others. Points of interest visited were Beatie, Bullfrog, Rhyolite, the casino, bottle house and early day railroad station.

The speaker for the evening was Dr. Richard Johns, who is with the Department of Geological Sciences at California Institute of Technology. He started his lecture with colored slides in the Owens Lake area and explained the geology of the mountain ranges on both sides of the valley and the products that mother nature has produced. The Inyo mountains have been the source of about one-third of the talc produced for commercial use. The slides showed the Mono Rail line which was used in bringing ores from the mines in the Slate and Panamint ranges. In Saline valley near Keeler the aerial tramway was built at a cost of several million dollars. Ruins are still seen standing upright thru the sand. This rail line was all built above the ground, the rails and cars being about four feet in the air and the cars were loaded in such a manner that they balanced as they rolled down into the valley.

In the Darwin area along the Argus Range to Panamint is found smithsonite, and other zinc minerals. An interesting story of early days at Darwin Falls is that an old Chinese and his two sons took over the area of Darwin Falls, the only water available and planted trees and gardens. They made contracts with the officials of the cities of Panamint, Ballarat and Keeler to buy the refuse to be used as fertilizer and then sold the citizens the vegetables produced. One of the sons took $65,000 to town to deposit in the bank and soon after that a flash flood roared down the canyon sweeping out gravel for a depth of thirty feet and all the fertile soil used for the gardens. The former level can still be seen far up on the side of the canyon walls.

The Panamint-Searles Lakes area was once an ancient lake and the borax potash is a hundred feet thick where it settled in the former lake bed. The present Searles Lake is a mesh of crystals and brine with beautiful hanksite crystals to be found.

The slides taken in Wildrose Canyon showed the charcoal beehives in Mahogany Flate at 8500 foot elevation, which were built in 1860 and used local juniper, pine and spruce trees cut in the area. The beehives would be filled with wood and the fires started then allowed to burn until only charcoal remained. There are square miles of land that the timber has all been cleared from for this purpose. The beehives furnish shelter and protected camping space from the winter storms and the summer heat of the sun. The charcoal was hauled to Ballarat on the floor of the Panamint valley to be used to smelt ores mined in Panamint City which was an early day silver strike section.

Other slides showed Emigrant Wash which led down to the bed of the former Lake Manly which was sixty miles long and now known as Death Valley. It is surrounded by the Black Range, Grapevine and Funeral Ranges. The famous twenty-mule team route was thru the Wingate Pass. The great Garlock Fault crosses the valley and may be found at points starting on the Ridge Route between Los Angeles and Bakersfield then crosses Antelope Valley, across to Randsburg and then again at Baker near the Nevada Line.

Myrtle Musselman
26327 Athena Avenue
Harbor City, Calif.

Yavapai Gem and Mineral Society

An exceptionally fine selection of colored slides from the hundreds in his possession was presented by Harland A. Ludwig in an illustrated talk before members and friends of the Yavapai Gem and Mineral Society at the meeting held Tuesday, January 2, in St. Luke's Parish House, Prescott.

Roy Kuntz, president, presided. He was supported by Mrs. Ernest E. Michael, former secretary-treasurer, who took notes for the present secretary, Mrs. Jeanne Humburg, who was out of town.

"I was brought up in a part of the country where we did not have rocks either in the quantity or the majesty of those in this country," the speaker said. "As a child I can remember I looked for stones on the Michigan lake shores or in places where stones were exposed. Occasionally I found Michigan agate. Today I am interested in rocks principally because I have a son who has a good collection but also because of the beautiful country where they are found."

In his colored slides Harland Ludwig took the members to many parts of the country, showing them many beautiful places—not necessarily because of the rocks found there but because of their beauty. In composition and subject matter each picture was as beautiful as a painting.

Slides shown included shots in Michigan, Massachusetts, Washington, D. C.—with some striking and unusual closeups of the Lincoln memorial—Louisiana, Florida and Arizona. The incredible beauty of Havasu Canyon was revealed in pictures of the Navajo, Havasu and Mooney Falls.

Very popular were the slides portraying a great variety of flowers. Rockhounds, their eyes on the ground searching for minerals and gem stones, often awaken to the beauty of flowers found growing among the rocks.

Loud applause marked the conclusion of a most attractive program.

Door and quiz prizes presented by Ernest E. Michael, past-president, were won by Al Potter (senior) and John Ludwig (Junior)—door; Mrs. Al Potter (senior) and Martin Hoffman (junior)—quiz.

Members unanimously agreed to purchase two chairs and present them to the Fagerberg Civic Center to help toward the number necessary for regular club and society meetings at the center.

An invitation was received from the Maricopa Lapidary Society for the local society to be represented at the second rock and gem show of the lapidary group to be held in the National Armory, Phoenix, February 17 and 18. The show will include cabochons, facetted gems, spheres and handsome wrought silver work and jewelry; also many fine mineral specimens and an exhibit of fluorescent material.

It was decided that participation should be left in the hands of interested individuals who would arrange for the showing of their collections.

The treasury of the society showed a balance in hand of $74.43.

Librarian Harold Butcher announced that the society library now has a number of books dealing with the story of the earth and of the earth sciences. Immanuel Velikovsky's controversial best-seller, "Worlds in Collision," has just been temporarily loaned to the library to present yet another view of the cosmic drama now being enacted in space.

Harold Butcher
331 Park Avenue
Prescott, Arizona

St. Louis Mineral and Gem Society

HAIL FELLOW ROCKHOUNDS . . . St. Louis greets you finally. The first meeting of the St. Louis Mineral and Gem Society was held December 15th with 16 hounds attending; by the second meeting on January 5th the good news had spread and there were 46 in attendance. It was decided that Charter membership will be open to those who sign the Constitution and have paid their membership dues by the close of the March 2, 1951 meeting. Permanent officers will be nominated at the March meeting. Meetings will be held on the first Friday in each month at the Geology Building of the St. Louis University, Grand Avenue at Laclede, St. Louis, Mo.

For information call or write Mrs. Theodore Boente, Secretary, 4980 Neosho Street, St. Louis 9, Mo., Phone: Flanders 8905.

Austin Gem and Mineral Society

Emil H. Spillmann was elected President of the Austin Gem and Mineral Society at a regular meeting recently. Other officers elected to serve with him are:

Vice President ..... Dr. Stephen Clabaugh
Secretary ..... Mrs. Bill Branch
Treasurer ..... E. A. King
Directors ..... L. T. Johnson
Mrs. R. M. Edgar
Bud Harris
Chester Brooks
Dr. Albert Tisdale

Dr. R. T. Havens of Brownwood will be guest speaker for the February meeting of the Society. His subject will be "Some Collecting Areas in Central Texas." The Society meets the 2nd Thursday of each month in the Auditorium of the Public Library, Austin, Texas, and any person interested in rocks, minerals, or lapidary art is invited to attend.

Humboldt Gem and Mineral Society

The first Anniversary Meeting of the Humboldt Gem and Mineral Society was held January 26, 1951, at the Eureka Jr. High School. The Society now boasts a membership of 101. During the business meeting, a new board of directors was elected, new changes and additions to the constitution read and temporary various committee chairmen appointed. Frank Loveless, president, introduced the speaker of the evening, Mr. J. J. Bognuda, seismologist in charge of the government seismograph station at Ferndale, Calif. Mr. Bognuda was educated in Tokyo and has studied seismology for 44 years and has presented a theory which is accepted. After a raffle of rocks, the meeting was adjourned and refreshments were served.

Clory Drake, Pub. Chm.
Eureka Jr. High School
Eureka, Calif.

Mother Lode Mineral Society
Modesto, California

At our January meeting the following officers were elected:

Joe Sousa ..... President
Fayne Rinehart ..... Vice Pres.
Lois Wemyss ..... Sec. Treas.
Les Burford ..... Director
Warren Hughes ..... Director

Major A. R. Klein, one of our members who has been stationed in England the past six months, showed colored slides of points of interest he had taken while there. Several pictures showed the rock structure of the homes and buildings. Major Klein pointed out that flint was used quite a bit for color and availability.

Lois Wemyss, Sec.
231 Tuolumne Blvd.
Modesto, Calif.

Mineral and Gem Society of Castro Valley

At the Society's regular monthly membership meeting, which was held on Friday evening, January 12th, 1951, at the Hayward Union High School, Wesley Gordon of Hayward discussed the findings of his Boy Paleontologists at the Irvington Gravel Pits in the hills adjacent to Mission San Jose. The work of Mr. Gordon and his group, which has attracted nation-wide attention in scientific circles, includes the discovery of many fossilized remains of extinct prehistoric animals. This includes mammoth teeth, vertebrae and a well-preserved foot, rodent bones, camel jaws and the skeleton of the only one of a species of a four-horned antelope which has never been discovered. His talk was illustrated by over 100 colored slides showing the excavation site and numerous specimens both before and after their removal.

Plans were made for the Society's next field trip to be held on Sunday, February 18th, to Pescadero Beach and Kent Ranch, seven miles below Pigeon Point, where beach agates, petrified clams and whale bone and abalone shells are to be found. Announcement was also made of the Society's Third Annual Mineral Show which has been scheduled for Saturday and Sunday, April 7th and 8th, in the Library of the Hayward Union High School.

New membership applications were received from Mrs. Eugene Tucker and Stephen Tucker and the prizes were awarded to the following members and guests; Frank and Alice Wilcox, Mrs. Gladys Luce, Mrs. A. Nominee, Al and Janet Breeden, Douglas Morra, Tom and Tommy Dambak, Margaret Sparks and James Harvey.

February Meeting

At their last regular monthly membership meeting, Friday evening, February 9th, in the Cafeteria of the Hayward Union High School the Society was addressed by three members, who told of their field trips. Mrs. Gladys Luce, a Director of the Society, described her most recent expedition to the desert region of Southern California and Nevada, including Las Vegas and Lake Meade. Carl "Cappy" Ricks related some of his experiences in search of Virgin Valley fire opals and F. W. "Daddy" Buhn told of his adventures on the trail of Horse Canyon agates in Kern County.

Wesley Gordon, Leader of the Boy Paleontologists of Hayward, announced some recent discoveries of fossils by his group, which include a bear skull of the species TREMARCTOTHERIUM, a pre-historic badger tooth, the toe bones of a musk-ox type of animal, and the vertebrae of a reptile resembling a snake or lizard. The bear skull is a particularly rare specimen, representing the first of its kind ever to have been unearthed in this region.

President Al Breeden announced further details concerning the Society's Third Annual Mineral and Gem Show, which is to be held Saturday and Sunday, April 7th and 8th, in the Library of the Hayward Union High School. He said that Director Tom Robb will be General Chairman with William La Rue of Oakland and David Grigsby of San Lorenzo to act as Judges for the event. The former is to judge the cabochons and the latter to judge the minerals. Treasurer May Meyers stated that dark room facilities have been secured adjoining the Library for the showing of fluorescent mineral displays.

Mrs. Meyers also announced that negotiations were being made with Dale Walfron of the Hayward Union High School Industrial Arts Department in regard to the possibility of conducting adult evening classes in lapidary work provided a sufficient number of enrollees can be secured.

Announcement was also made of the Society's next field trip on Sunday, February 18th, when members will meet at 10:30 A.M. at Pescadero Beach to prospect for beach agates and from there to Kent Ranch in search of petrified whale bones, fossils and Indian relics.

New membership applications were received from Miss Bernice Riney, of Castro Valley, and Victor R. Boisseree, of Hayward.

Prize Awards in the form of mineral specimens were won by Joe Moray, Mrs. E. Tucker and Victor R. Boisseree.

Arthur B. Emmes, Pub. Chm.

7845 Castro Valley Blvd.
Castro Valley, Calif.

Southwest Mineralogists

At the January meeting of the Southwest Mineralogists a colored motion picture "Ghost Towns," loaned through the courtesy of the Signal Oil Company, was enjoyed. With the discovery of gold by Marshall at Sutter's Fort on the Sacramento River, communities mushroomed over night attracting a nondescript populace, many remaining to establish towns throughout what is now known as the Mother Lode Country. The film shows the development of the gold mining industry and its associate dominant personalities of that era.

Suggested changes in the constitution and bylaws of the club were read for the members consideration and discussion.

The Southwest Mineralogists will hold its 14th Annual Gem and Mineral Show, Saturday, April 21 from 1 p.m. to 10 p.m. and Sunday, April 22 from 10 a.m. to 6 p.m. at Palestine Masonic Temple, 471 W. 41st Place in Los Angeles, Calif. There is no admission charge and the public is cordially invited to attend.

Bea Zehrbach, cor. sec.
5127 W. 118th Street
Hawthorne, Calif.

COLLECTOR'S COLUMN

Conducted by A. CAL LECTOR

This column, designed to be a help to beginners in mineralogy. began with the Sept.-Oct., 1948, issue. In the last issue Cinnabar, an ore of mercury, was discussed. This time we will study copper, one of the few metals which can be found in the native form, that is, naturally uncombined with other elements.

Native Copper

Copper has been known since ancient times. According to M. Berthelot, the oldest known copper mine connected with the smelting of copper occurs in the Sinai Peninsula, and workings there have been traced back to 4300 B. C. The name copper was derived from the Latin term cuprum, a popular form of cyprium, from the isle of Cyprus where ancient mines produced this metal.

Copper is highly ductile and malleable, and is an excellent conductor of heat and electricity, hence, it is one of the most valuable metals used by man. The color of native copper is light rose on a fresh surface which quickly becomes a copper-red. then brown. It has a hackly fracture, that is, the broken surface is jagged. The streak is metallic, shining. It is a heavy mineral. The common occurrence of native copper is in irregular shaped pieces ranging from small grains in some rocks to quite large masses. One such mass, estimated to weigh about 420 tons, was discovered in the Minnesota mine of Northern Michigan in 1857. Crystals, often much distorted, as well as hairs, wires, and tree-like growths, are other forms in which the metal is found.

The best known locality for native copper is on the Keweenaw Peninsula of northern Michigan. The mines here, some of them to a great depth, extend in a narrow belt for about 200 miles. These have been worked for over 400 years and still produce fine crystals and beautiful specimens of copper associated with calcite, prehnite, etc. Small crystals in arborescent groups come from the Bisbee. Arizona, Copper Queen Mine. Many small deposits of native copper occur in the Triassic trap rocks in the eastern states. An example of this is found around Greenstone on South Mountain, Adams County, Pennsylvania, where several mines were operated, but are now abandoned—a few good specimens, usually small masses associated with cuprite and epidote, can still be found on the dumps.

Fine crystals of copper come from Turinsk, near Bogoslovask, Perm in Russia. Noteworthy specimens have been found in Germany, Italy, Cornwall in England, Broken Hill in New South Wales, Chile, and Corocoro, Bolivia.

Every collection should contain specimens of native copper. Your favorite dealer carries a variety of copper specimens in stock. Send for some today.

NORWEGIAN IRON ORE EXPLORATION TO GET MARSHALL PLAN FINANCING

Washington, February 21, 1951 — A potential Norwegian source of nearly 300 million tons of low grade iron ore, of strategic value to the Atlantic Pact countries for military defense purposes, will be explored with the help of Marshall Plan dollars, the Economic Cooperation Administration announced today.

The Dunderland field was initially mined in 1906 and between that time and World War II a total of 500,000 tons of concentrate assaying 67 percent iron was produced. During and after the war, however, the majority of the concentration plants were scrapped and there has been no production from the field since 1939.

BIBLIOGRAPHICAL NOTES

GEM HUNTER'S GUIDE, By Russell P. MacFall.

A revised and enlarged edition of the "Gem Hunter's Guide" has been published recently. It is designed to aid the ever-growing group of amateur cutters and mineral collectors in their search for gem materials. The book deals principally with the United States.

An introductory chapter, "It's fun and profitable to hunt gems," mentions the values of searching for gems and discusses the qualifications a mineral must possess to be classed as a gem, along with a study of some of the tests employed in identification. A table giving the characteristics of those minerals generally considered worth collecting and cutting includes 70 varieties from agate to zircon. Hardness, composition, color or pattern, luster and diaphaneity, fracture or cleavage, special notes and associations are given for each variety. The formations in which gems occur are studied briefly giving the reader an idea of the types of rock in which to search. This is followed by a unit discussing necessary equipment for field trips and the hazards which may be encountered.

A special chapter takes the reader on a tour of the localities where diamonds have been found in the United States. Four sketch maps show areas of authentic finds, and four charts indicate what has been found in the way of diamonds at some of these areas. The diamond mining area of Arkansas is discussed separately. A second special chapter deals with a material classed as a gem but not properly a mineral—the fresh water pearl. A study is given of the localities where they have been found. A third special chapter on "black light" briefly scans the field of fluorescence. A full page chart shows the relation of the electromagnetic spectrum to the band of ultra violet rays responsible for fluorescence. A table of 67 prominent fluorescent minerals gives their color, wave length of response and where they may be found.

The largest part of the book is given over to tables showing locations, listed by states, where gem materials have been found, and an alphabetical list of minerals from agate to zircon, each mineral being listed according to occurrence by states.

Several special features are incorporated in the book. Among these are a glossary of 53 mineral terms, a list by states, where mineral information may be obtained, and a brief description of each of 18 books recommended to the gem collector.

The book contains 187 pages with 2 pages of diagram drawings of typical crystal forms and a special eight page portfolio insert of photographs of gem materials in the natural state. The book is cloth bound, 5" by 7" in size and sells for $3.00 per copy. It is published by the Science and Mechanics Publishing Co., 450 East Ohio Street, Chicago 11, Illinois.

H. V. Hamilton

COPPER IN CALIFORNIA

Bulletin 144

Compiled and edited by the Staff of the California State Division of Mines, 429 pages, accompanying map pocket, Bulletin 144, of the Division publications. Copper in California was recently released by the Division of Mines and should prove of considerable interest to mining engineers, geologists, and mineralogists. Much of importance has occurred, both economically and geologically since the last copper publication, Bulletin 50, now out of print.

While no specific publication has been issued by the Department strictly upon the subject of copper for a number of years, the regular bulletins dealing with mining generally have devoted much attention to the activities of the copper mining industry. However, this information is not always readily available, and Bulletin 144 tabulates all previous publications, and records pertinent data on each copper property.

This Bulletin is divided into three parts, and is accompanied by an elaborate series of maps, the latter being in a specially bound map pocket, which is separate from the printed volume. Part I is devoted principally to a study of the noted California Copper Belt; Part 2 affords a comprehensive presentation of marketing and metallurgical factors as related to the complex copper-bearing ores; Part 3 summarizes the data upon copper production, discusses generally the distribution, mineralogy, and geology of California Copper occurrences.

The major portion of the volume consists principally of contributions by the United States Geological Survey and the Bureau of Mines, based upon strategical mineral investigations. One of the most valuable features of the volume is a carefully selected and detailed

bibliography. The index is likewise exceedingly complete. It will stand as a milestone of progress in presenting the history, geology, economics and future of the California copper occurrences. Appearing as it does, in California's Centennial year, adds interest to the volume. Bulletin 144 including Economic Mineral Map No. 6-Copper, may be purchased for $6.00; or the separate pocket containing 52 maps may be purchased for $1.00 from the California Division of Mines, Ferry Building, San Francisco 11, California. California residents please add 3% sales tax.

Reviewed by J. B. Nichols

Cabochon Jewelry Making, by Arthur and Lucille Sanger.

The hobbyist who finds pleasure in making beautiful and worthwhile articles, and who has a minimum of knowledge of the use of small hand tools, will find this book made to order.

The entire story of making jewelry without facets (Cabochon jewelry) is told in detail—highlighted with precision drawings and sharp, understandable photos.

Many attractive new designs and methods of mounting cabochon jewelry are shown in this comprehensive guide for all amateurs.

General instruction are given beginning with the making of the design and following through to polishing and setting the finished stone.

The book also includes a full discussion of tools, decorations and types of mountings.

You are shown how to make more than 100 articles of jewelry—necklaces, bracelets, pendants, rings, brooches, earrings, pins.

The authors have long been associated with lapidary work and silversmithing. Together they headed this department in the American Industrial Magazine, contributed numerous articles to the field, and gave private studio lessons.

The book is beautifully illustrated, contains 128 pages, and sells for $3.50 a copy.

Published by Charles A. Bennett Co., Inc., 3040 Duroc Bldg., Peoria 3, Ill.

Report of the Committee on the Measurement of Geologic Time, 1949-1950. John Putnam Marble, Chairman.

Presented in preliminary form as Appendix C at the Annual Meeting of the Division of Geology and Geography, National Research Council, April 29, 1950.

The report contains a Summary Report of the Committee by John Putnam Marble; Progress Report to the Committee by P. M. Hurley; Report to the Committee by L. H. Ahrens; Lead-Uranium Ratios of Two Saskatchewan Pitchblendes, by H. V. Ellsworth; Recent Analyses of Radioactive Minerals from Brazil, by Willer Florencio and Djalma Guimaraes; Annotated Bibliography of Articles, by J. P. Marble; and Age in Years of the Formation of the Elements, by J. M. Lopez de Azcona.

Issued by the National Research Council, 2101 Constitution Avenue, Washington 25, D. C., 118 pages. Price $1.00.

Jeweler's Stone Digest.

Compiled by the staff of William V. Schmidt Co., Inc. expressly for the American Jewelry Trade, this digest is written in simple non-technical language to give the retail jeweler and amateur gem collector a working knowledge of the fundamentals of jewelry stones and their identification.

A most interesting and informative 16-page illustrated publication on gems and their identification that was issued by one of America's leading gem stone houses, the William V. Schmidt Co., Inc., 30 Rockefeller Plaza, New York 20, N. Y. Copies are free on request.

Plummer's 1951 Price List

An interesting 20-page illustrated pocket-size price list on cut and rough gemstones, mineral specimens, books and magazines was issued recently by Plummer's, 2183 Bacon St., San Diego 7, Calif. Send for your copy TODAY. It is free.

High Schools Should Teach Rocks!

Editor R & M:

I have been collecting rocks and minerals since I was nine. This makes it about twelve years. Until very recently however it has not meant much to me. This year I decided to take a geology course here at the University. Elementary geology has greatly increased my interest. One thing I would like to know: why is it that no courses are given in the high schools throughout the nation? I am sure that if courses in geology and mineralogy were given in schools more people would consider taking up "rock cracking" as a perfectly normal hobby.

I wish to congratulate you on the good magazine. In each issue I always find something of note. It has added considerably to my knowledge of rocks.

Howard D. Spalding
Burlington, Vt.

January 4, 1951

MAINE LOCALITY

(Continued from Page 158)

patrolman along this route and only asks that rubbish and broken rock shall be cleaned up along the highway limits.

In passing I might mention the pink quartz on Sawyer's Mountain five miles from Limerick. I have not seen any deep titanium tinted specimens, but have been told by a deer hunter recently that he can lead me to a deposit.

There is also apatite to be found in Limerick, although it is not known to be common.

THE EARTH SCIENCE DIGEST

BOX A-28

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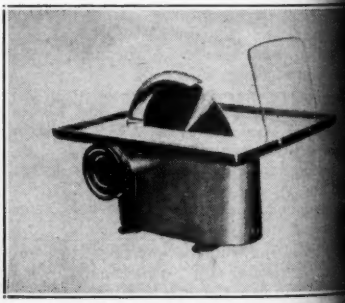

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Table Finish	Rust Resisting Cadmium Plate
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Saw Blade Guard	Cast Aluminum Alloy
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